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ABSTRACT

Developed by curriculum coordinating unit staff, this study guide was designed for use by students in occupational orientation classes. Intended to serve as a central core around which class activities may be structured, the guide includes 17 units on topics such as: (1) Determining the Importance Of Work, (2) Understanding The Present World Of Work, (3) Preparing For A Career, (4) Exploring Outdoor Occupations, (5) Exploring Science Occupations, (6) Exploring Arts and Entertainment Occupations, (7) Locating and Applying For A Job, (8) Selecting A Career, and (9) Working On The Job. Each unit includes pertinent background information, review questions, and suggested activities. It is hoped this material will help students make intelligent career plans and decisions. This publication is a revision of ED 050 279. (JS)

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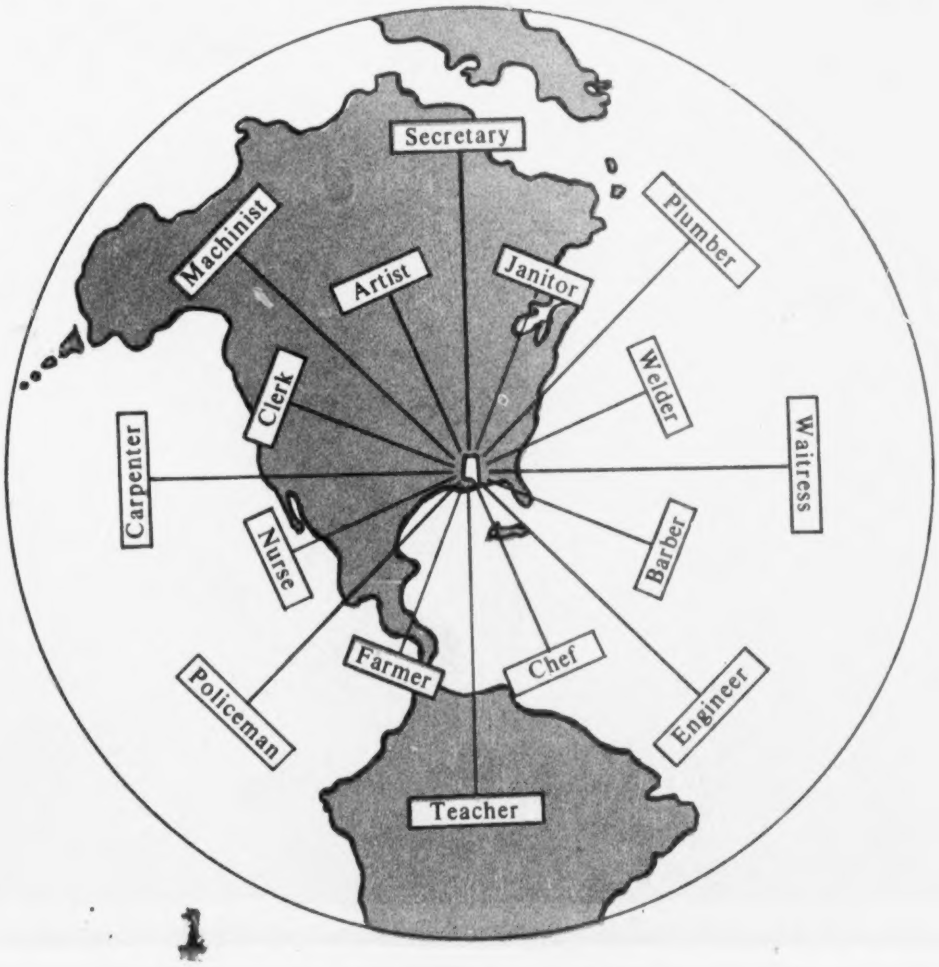
OCCUPATIONAL ORIENTATION

An Introduction to the World of Work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OCCUPATIONAL ORIENTATION

An Introduction to the World of Work

by

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1971

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Foreword

The Vocational and Technical Division of the State Department of Education has always tried to expose students to all areas of work in a systematic way in an attempt to broaden the base for vocational choice. In the past this was largely done by vocational counselors and teachers. However, recent trends in the world of work and in education have placed increased emphasis on the need for effective programs of vocational guidance. The passage of the 1968 Amendments to the Vocational Education Act of 1963 placed additional emphasis on vocational instruction designed to assist individuals in making informed and meaningful occupational choices. In response to this need the Curriculum Coordinating Unit for Vocational and Technical Education was assigned the task of developing a course of study in Occupational Orientation.

This course of Occupational Orientation is designed to provide information about the world of work and help students prepare to make the choices which are called for as they move through school toward an ultimate vocation. Such instruction will help students eventually make vocational choices that are satisfying and productive for themselves and for the society of which they are a part.

Joe McDaniel, State Supervisor
Vocational Guidance and
Occupational Orientation

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To The Teacher

Assistance in career development for youth is receiving increased attention in education today. Many schools have classes in which students study about occupations and the requirements for success in the world of work. Frequently, the teachers of such classes have indicated that additional materials were needed by their students.

This publication is designed for use by students in occupational orientation classes. It is to provide a central core around which class activities may be structured. However, teachers must realize that this publication is not intended as a textbook. Seventeen Units, or Chapters, are presented. Each Unit contains pertinent background information followed by review questions. A number of suggested activities are listed at the end of each Unit. The activities listed are a few of the many possibilities. Teachers are encouraged to use creativity with a variety of techniques in providing realistic activities for occupational orientation classes.

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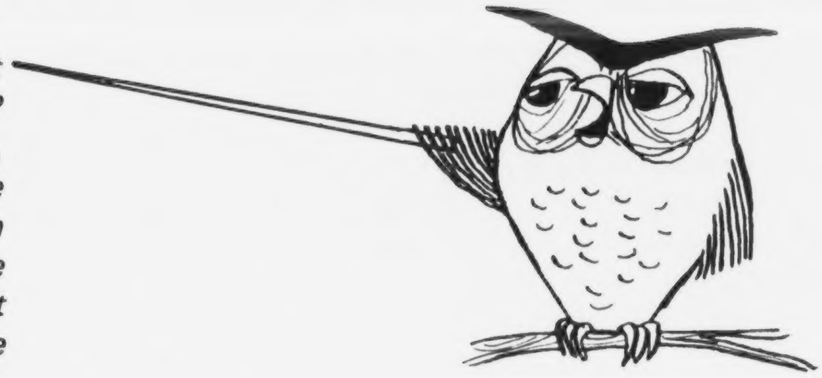
I. Introduction



Have you ever thought about how people get started in jobs? People get into jobs in various ways. Entering jobs is simplified if one knows what is required. Success in life will depend upon what one knows. Success in getting the best job will depend upon what one knows about work. This publication is designed for better understanding of jobs and work.

The Introduction will attempt to answer the following questions:

1. **What is occupational orientation?**
2. **What is the "world of work"?**
3. **Why should youth study occupations?**

1. What is occupational orientation?

"Occupational orientation" is a big term that implies a number of things. In some places, high schools have classes named Occupational Orientation. In these classes students study all about jobs. Field trips, movies, laboratory exercises, and other activities are included. These activities are designed to let students know what it is *really* like to work in various jobs. Teachers coordinating these activities are specially trained. They have studied vocational education and guidance. Many schools also have counselors who assist the occupational orientation teacher. Sometimes the occupational orientation teacher may be known as a coordinator of orientation.

The major purpose of classes in occupational orientation is "to provide individuals with sound bases for job choices." Sooner or later almost everyone has to decide upon what kind of work to do. Decisions are more easily made if an individual knows about various kinds of jobs.

Occupational orientation is more than the name of a class. It is also a process. Occupational orientation is a process whereby persons locate themselves relative to jobs. In brief, it involves developing an understanding of the world of work. Many things are included: attitudes, aspirations, self-concepts, aptitudes, and environment. Selecting the first job may decide the course of an individual's life. Yet, the choice of a first jobs is not a final decision. It is the first of a series of choices which serve as a basis for directing one's life.

2. What is the "world of work"?

The term "world of work" is commonly used by teachers and counselors in occupational orientation classes. It includes all of the jobs, and the activities that relate to them, in which people are employed. With most people, employment in the world of work is the means of earning money to pay for the necessities and luxuries in life. Everyone who works is a part of the world of work: newspaper delivery boys, waiters, welders, and engineers are a few. Persons in the world of work usually have careers, occupations, and jobs.

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A career is the course of a person's life as related to the world of work. It is similar to a vocation in that it may be said to be a "calling" to a particular business or profession. People may pursue careers in education, agriculture, marketing, and other areas. A career may involve several different occupations. For example, in a career in education a person may start as a teacher, advance to assistant principal, then to principal, and, finally, to superintendent. All of these occupations are in the same career—education. Yet, each is a different occupation and involves different activities and responsibilities.

Distinction is usually made between occupations and jobs. Several persons may have the same occupation but a different job. A job is any definite task, usually performed for pay. Sometimes professional jobs are referred to as positions. The word "job" implies site and specific function or duty. Take for example, the case of two carpenters. Their occupations are the same but their jobs might differ in several ways:

1. One of the carpenters could be employed in one city and the other in another city. Hence, their jobs would not be the same.
2. The two carpenters could be employed at the same construction site performing different tasks.
3. One of the carpenters could be unemployed. He has an occupation but not a job.

Some people are not monetarily paid for their work. The importance of work cannot always be measured by whether or not money is involved. A good example is the occupation of housewife. Work is very definitely involved in managing and caring for a home. This kind of work is important to the well-being of a family. Pay for the housewife is in the form of intangible rewards that come from the satisfaction of a well-kept and properly-managed home.

3. *Why should youth study occupations?*

There are many occupations in the United States. In fact, close to 35,000 different occupations are known to exist. A majority of these require specific education and training. Also, occupations change. New technological advances require persons in certain occupations to learn new skills. Additional education and training may be required. If a person in an occupation fails to learn the new skills, he will soon fall behind and may be replaced by one who did learn. It is obvious that youth have many occupational opportunities and challenges ahead of them. They will need facts with which to make decisions.

Youth can learn much from a study of the world of work. With the average life expectancy of 67.0 years for men and 74.2 years for women, many years of productive life lie ahead of every young person. The concern of most persons is to make the most of their lives. Every young person will have to make certain decisions. One of these is concerned with the kind of career to pursue. Decisions can be made more realistically if one knows about occupations.

Young people must also know something about themselves. Interests, attitudes, and capabilities must be considered in selecting an occupation. Some occupations require considerable education and training. A knowledge of where the education can be obtained and how much it will cost is a must. Consideration must also be given to the assets available; that is, the amount of money available to pay for the education.

Studying occupations should be of great value in planning for the future. A job or school should be selected on the basis of a rather thorough knowledge of the world of work. Since many persons are unhappy with their first job or area of study, consideration should be given to personal traits.

Students going to college need to be realistic in selecting an area of study. Certain areas of study have been glamorized. For example, engineering is glamorized at some universities. Occasionally, students enter this area of study without considering what is involved. After one or two semesters and several hundred dollars for tuition have been spent, the student begins to realize that engineering is not for him. He changes to some other area in which he is happier. In the meantime, he has taken courses which may not apply to the new area. He may have received low or failing grades and, possibly, have been placed on probation. He may have to attend one or more additional semesters beyond what is normally required to earn a degree.

Students going to vocational schools need to be able to select the area in which they want to receive training. Consideration should be given to the opportunities available after training. There is great demand and prestige for skilled persons in certain occupations. The period of training is usually less than that required for a college degree. Through a study of the educational requirements for entering various occupations, young people will be assisted in developing their plans.

For youth not desiring to continue their education after high school, a knowledge of occupations will be helpful. Studying the world of work will assist in obtaining the first job, working well on the job, and advancing. Many successful people have not had education beyond high school, but the trend is in favor of those with additional education.

This publication is concerned with assisting youth in developing insight into the world of work. Considerable information and activities are included to help develop an understanding of what the world of work is really like.

Students should also use other reference materials that are available. After studying the information and performing the suggested activities, students should have a good foundation for planning their future.

Review Questions:

1. What is the purpose of occupational orientation classes?
2. Can an unemployed person have an occupation? Explain.
3. How many different occupations are found in the United States? List the occupations of your parents and/or other family members.
4. How will studying the world of work assist youth?

Suggested Activities:

1. Have your teacher explain some of the activities which are a part of your occupational orientation class.
2. Have your teacher or counselor review some of the benefits received by students previously enrolled in occupational orientation.
3. Tour the classroom and occupational laboratory. Some schools have specially equipped orientation laboratories. Other schools include the following as a part of the occupational laboratory: business education facilities, shop, agriculture department, home economics laboratory, and distributive education department. Your teacher may want to give short demonstrations of some of the equipment.
4. Write a short paper entitled "My Plans for the Future." Keep this paper and change it throughout the year as your plans change. Your teacher may prefer to keep this paper for you until near the end of the year when another paper could be written with the same title. You can compare the two papers to see how your plans change.

II. Determining The Importance Of Work

Did you know that the average person works about 2,000 hours each year? This is true, assuming that one works 40 hours a week and has two weeks off for vacation. Some people average more than 40 hours of work each week. There must be some reason why people spend so many hours working. The following questions will be answered in this unit:

1. **Why do people work?**
2. **How does work contribute to level of living?**
3. **What is a "work ethic"? How do work ethics vary?**

1. Why do people work?

Work is important in the lives of all people. Yet, they may not know what the word means. "Work" is frequently used interchangeably with "occupation" or "job." It is commonplace for one person to ask another about his work.

Various meanings are attached to the word "work." In a broad sense work refers to what an adult spends most of his time doing. It is the major focus of one's activities and energy. It is usually the way one earns a living, but not always. For example, the major focus of the energy of a housewife is to maintain a home. She receives no pay for this activity, yet it consumes most of her time.

Work is also said to be "human effort devoted to production." Goods and services are produced. Goods include food, clothing, appliances, and all of the other tangible things that are a part of our daily lives. Services are intangible. Examples of services include the work of persons in dry cleaning, medical, and similar occupations. In these occupations, one does something for the customer but no new product changes hands.

People work for various reasons. When questioned, most people indicate that they work for pay, but there are other reasons people work. These involve the meeting of certain needs. Those met through work are related to the physical and other needs of man.

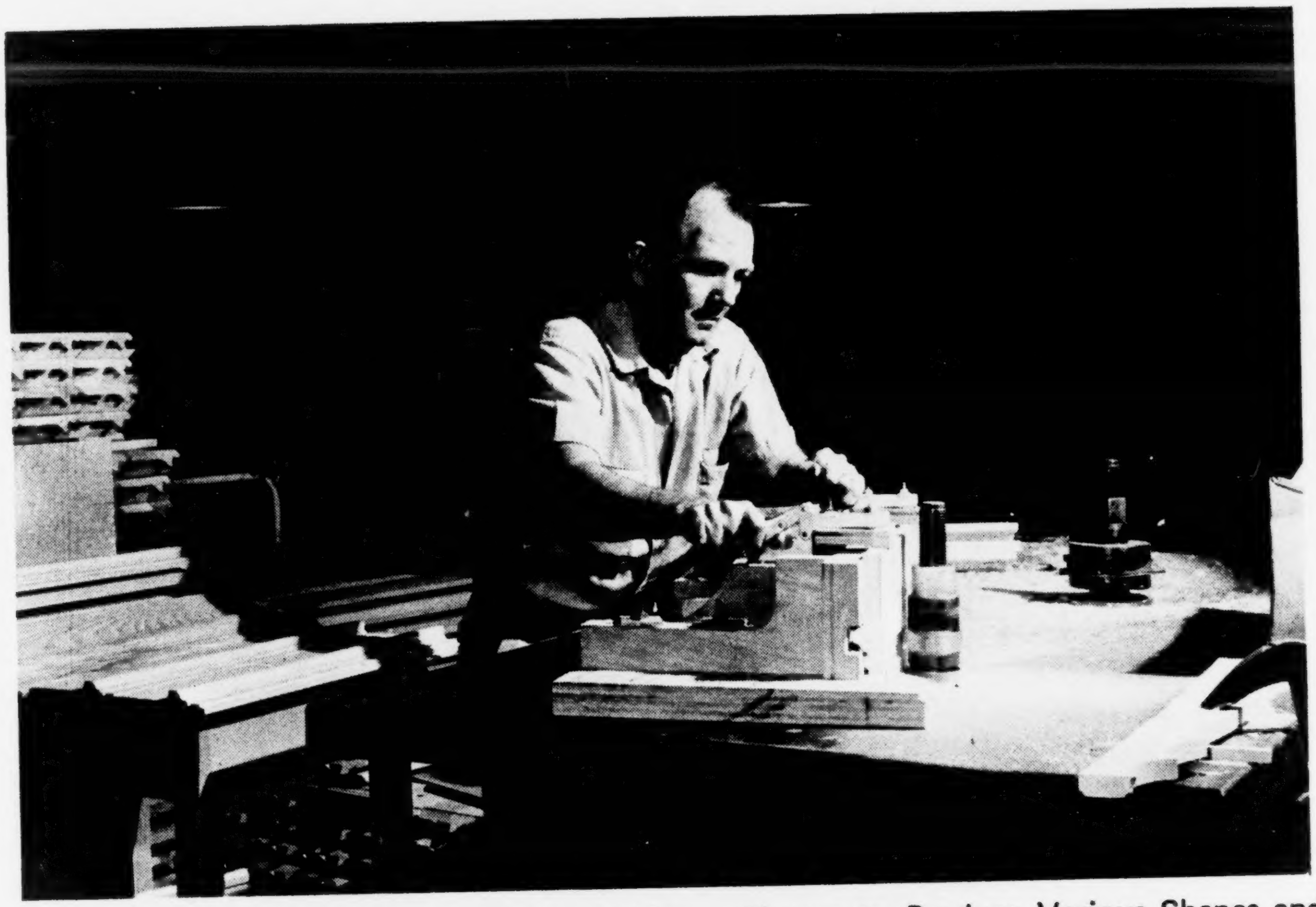
Physical Needs

The money earned by working provides food, clothing, and shelter. These are the necessities of life. Food accounts for approximately one-fourth of the money required for physical needs. It should be noted that the proportion of money spent for food has declined in recent years. A few years ago one-third or more of the money earned was spent for food. On the average, more money is now available to buy clothing, housing, entertainment, and recreation than previously. The amount of money available for physical needs depends upon the amount of pay received. Pay varies with the kind of work and productivity on the job.

Other Needs

People have needs other than those which money will buy. Work serves to fulfill those needs. Most people want to be recognized, to feel important, and to achieve.

Work provides an opportunity for recognition when a job is well done. Recognition comes in the form of respect from fellow workers, employers, and the general public. Many businesses have incentive plans to reward good work. Employee appreciation in the form of awards for years of service and improved efficiency provide recognition.



The Work Shown Above Involves Using a Shaper to Produce Various Shapes and Designs in Wood. (Courtesy MPI Industries, Jackson, Mississippi.)

A person feels important when he works hard and achieves goals. A feeling of importance is related to self-esteem. Self-esteem is the respect one has for himself. Knowing that a job has been performed well results in personal satisfaction. For example, a carpenter can receive great personal satisfaction from knowing that he has used his skill in constructing a house.

Everyone wants to achieve. To achieve one must have goals to work toward. If one does not have goals he may wander aimlessly and achieve very little. Achievement may come in various ways.

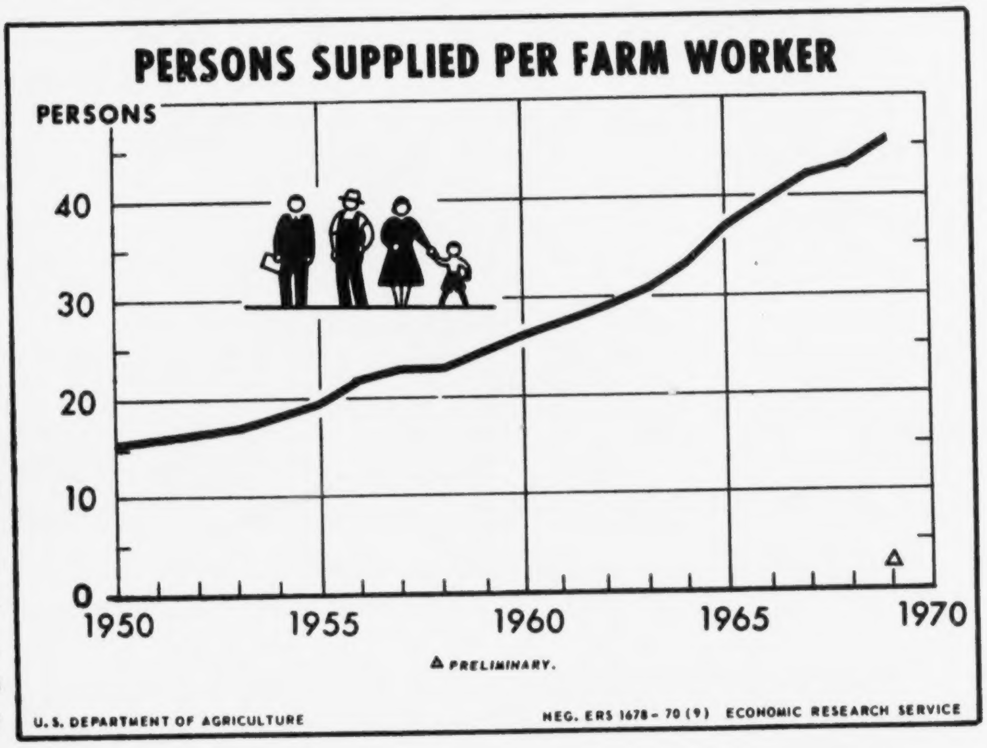
Work is a social arrangement. It aids in meeting the social and psychological needs of man. People want to be a part of something. By working, most people are a part of a company, department, or work crew. Friends are frequently found at work. Social activities after work hours may involve fellow workmen. Many housewives prefer to work full time or part time outside the home. Such work makes life more interesting and provides the opportunity of keeping in touch with the world of work. It also supplements the family's income.

2. How does work contribute to level of living?

Level of living refers to the way or style in which people live. Some of the things determining the level at which people live are the kinds of houses, clothes, food, and social and recreational activities available. Work contributes to level of living in two ways: (1) The level at which all of the people in a nation live and (2) the level at which an individual or family lives.

Level of Living in the United States

The level at which the people of the United States live has changed considerably since the days of the pioneers. Level of living is related to agricultural productivity. In earlier days practically everyone lived on the land. Almost everything a family needed was grown at home on the farm. Today, a relatively small percentage of people live on farms. The total labor force in the United States is now almost 85 million persons. Nearly 40 percent of this number work in agricultural occupations but only 5 percent are employed in farming. One farmer produces enough food and fiber for himself and 47 other people. If consideration is given to the agricultural products that are exported, one farmer produces enough for more than 50 people.



The affluent life which is enjoyed by most Americans is possible only because of the productive farmers. By having a low percentage of persons employed in farming, millions of persons are released from the production of the necessities of man, such as food, to produce instruments of pleasure in the form of automobiles, television sets, and many other devices prominent in our daily lives.

Nations with low agricultural productivity usually have low levels of living. More people are required to produce the necessities. Hence, fewer people are available to produce the luxuries.

It should be remembered that the productivity of farmers is due to agricultural research and education. Research is conducted to develop improved methods of production. Education is necessary to acquaint farmers with the findings of research. Research and education in agricultural areas have been and will continue to be important to level of living.

Level of Living of Individuals

The level at which an individual lives is determined by the overall level of living in the country in which he lives and by the kind of work he does. In countries with low overall levels of living individuals are more likely to live at a low level. Likewise, the reverse is true in countries with high levels of living, such as the United States.

Within the United States, the level at which an individual, or family, lives is determined by the kind of work the individual does. The work, or occupation, of an individual pretty much determines the amount of money available. Money is necessary to buy the goods and services required for living. The kind of occupation may result in certain business contacts which dictate level of living. For example, a medical doctor associates with other doctors.

Many medical doctors have similar levels of living because of the prestige, income, and social pressure from their peers. Commonly, in the United States, this is known as "keeping up with the Joneses."

Unfortunately, some people attempt to live at a higher level than their income will permit. Certain luxuries may be purchased when, in fact, the money would have been more properly spent on necessities. In such situations, an unreal level of living is created.

3. *What is a "work ethic"? How do work ethics vary?*

Ethics establish how people will act. This includes moral values and duties. Ethics gradually develop over a period of many years. Changes are made slowly. All of man's actions toward and with his fellow man are regulated by ethics. Areas in which strong ethics have developed are religion, sex, and work.

"Work ethics" are concerned with how people view work. Attitudes vary. Individuals have different views of work. The overall view of work varies from one country to another.

Work Ethics in the United States

Work is a natural and integral part of life in the United States. Much of the work ethic is rooted in religion. Most people contend that everyone should work. Some even say that "He who does not work is evil." The person who does not work may be considered a burden on society. Of course, exceptions are made for those who are old, very young, and handicapped.

Some cities and states have laws to encourage work. These are known as "vagrancy laws." Persons who cannot prove they have enough money to support themselves may be jailed. The same is true for persons who do not have jobs. These laws usually are not strictly enforced.

The work ethic varies slightly within the United States. People in the North may have slightly different views of work from those in the South. The differences are not great and are smaller today than a century ago. The keeping of slaves in the southern states served to set some people apart from the others. Wealthy persons who had slaves did little physical work. The women of the wealthy families spent their time keeping beautiful rather than working. The men spent much of their time in leisure activities. The abolition of slavery brought changes. Many of the "elite" women had to find places for themselves in the world of work. The men had to do work formerly done by slaves.

Ideas toward work are handed down from father to son. Changes do occur but only gradually. A change currently taking place is concerned with the role of women. Traditionally, the work of women has been in the home. Women are now taking jobs outside the home. They are entering occupations formerly reserved for men. Part of this change has been brought about by organized women's liberation groups. This is known as the "lib movement."

Most people like to work. They like the work ethic. In reality, the work ethic has contributed to the development of the country. Pioneers had to work to clear land and construct trails. The industrial revolution made it possible for man to be more productive. Machinery reduced the burden and drudgery of work. Much of the progress of our nation is due to the attitudes and willingness of the people toward work.

Work Ethics in Other Countries

The people in many countries have views concerning work that are similar to those in the United States. Canada and Europe do not differ greatly. There are countries, however, where work is viewed differently.

Work was considered evil in the ancient world. The Greeks and Romans of old thought that the gods hated man. Out of spite the gods forced man to work. In an attempt to avoid work, the richer people kept slaves. All who could avoided physical work.

Today in a few countries men are not the main workers. Women do most of the work. The men stay near the house and take life easy. These countries are not highly developed. The citizens usually have a low level of living.

Work is not highly developed in some of the primitive countries. No crops are grown. The people tend to roam around in tribes and live off of what they can find. These people lack many of the modern conveniences that others have to enjoy. Also, they frequently have a shorter life span because medical services are not available.

Work ethics are influenced by how the government functions. In certain countries all work is for the government. The goods and services produced belong to it. Government stores sell what is produced, keeping any profit for its treasury. This is different from the system of capitalism in the United States. Here individuals may operate stores and keep any profit for themselves.

Review Questions:

1. What is work?
2. What needs of man does work meet?
3. What is the most important factor related to "level of living" in a country? Why?
4. What determines the level of living of individuals?
5. What are "vagrancy laws"?

Suggested Activities:

1. Make a list of the goods your family uses. Indicate which are necessities and which are luxuries. You may choose to make two columns on a sheet of paper as follows:

GOODS MY FAMILY USES

NECESSITIES	LUXURIES

After everyone in the class has made a list, your teacher may develop a list on the chalkboard. Examples may be chosen from each student's list. Note: If you do not understand the terms "necessities" and "luxuries" your teacher will explain them.

2. Interview several people in different occupations. Ask them about the benefits of their work—to themselves and to society.

3. Invite an agriculture teacher, county agent, or other knowledgeable person to visit your class and talk on the topic "How agricultural productivity is related to level of living."

III. Understanding The Present World Of Work

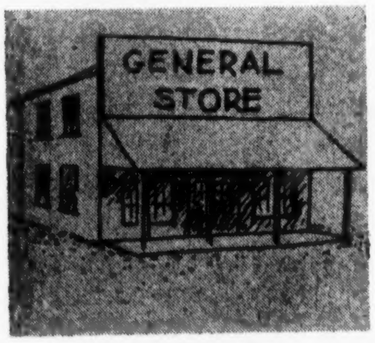
The world of work changes. Jobs change. New skills must be learned to find and maintain employment. Practices followed by employers also change. In brief, if one is to be successful in the world of work he must know the practices that are followed. He must also be willing to accept new practices.

This unit is designed to provide a broad understanding of the world of work. The following questions will be answered:

1. **How has the world of work changed?**
2. **What kinds of agencies employ workers?**
3. **How are businesses organized?**
4. **What is the possibility of owning your own business?**
5. **What is the trend in working conditions?**
6. **What is the place of unions in the world of work?**
7. **What is the place of apprenticeship training in the world of work?**
8. **What wage payment practices are followed?**
9. **What fringe-benefit practices are followed?**
10. **What legal regulations apply to workers?**
11. **What occupations are most promising? Least promising? Why?**
12. **What relationship does citizenship have to the world of work?**
13. **What is the role of avocational interests?**

1. How has the world of work changed?

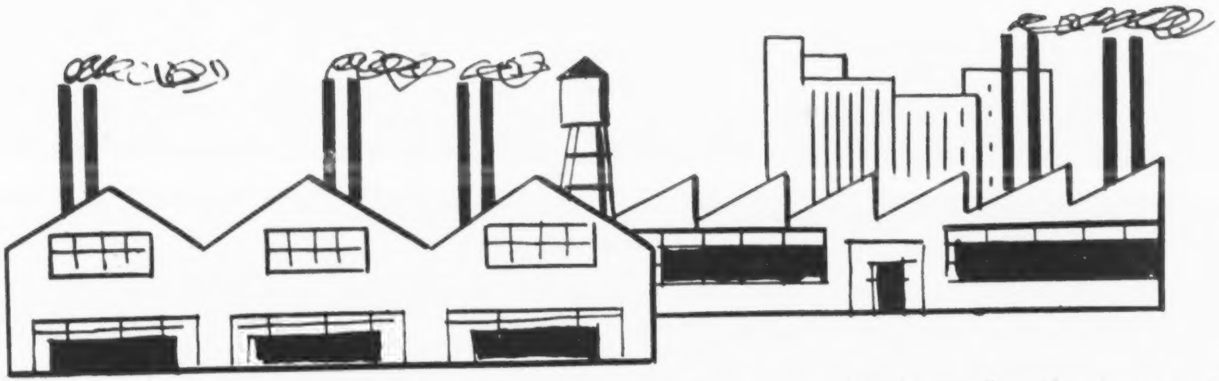
Many changes have occurred in the world of work. Changes in work affect how and where we live. Likewise, how we live reflects these changes. It is possible to place changes in work in groups. Three groups of changes are discussed here: (1) place, (2) technological advancement, and (3) skill requirements.



Place. Place of work refers to where work is found. In the early history of the United States most people worked at or near their homes. Practically everyone farmed. Little money was needed. Most of the food and clothing was produced at home. Only necessary items which couldn't be produced at home, such as sugar, flour, and kerosene, were purchased. Small communities with one or two general stores were located throughout the countryside.

In the 1800's certain machinery was invented. This machinery reduced the amount of hand labor required to do work. Factories to make the machinery sprang up. People moved away from the farm to be near these factories. Some of the small settlements became towns, and some of the towns became large industrial cities. Other small communities dwindled away and no longer exist.

Today millions of people live in or near large cities. Examples of such cities include New York, Chicago, and Detroit. Many people have moved from Mississippi to these and other cities. Large factories in which people work at many different jobs are found there. The trend of movement from rural areas to the cities still exists but it is not as great as it was a few years ago.



In areas that still remain relatively rural the trend has also been for the towns and cities to grow. The state of Mississippi is a good example. Many people have moved into the towns and cities of the state. The largest population areas are near Jackson and the Gulf Coast. Numerous industries have opened around the State. Persons desiring certain kinds of work have often found it necessary to move to the location of the work.

Technological Advancements. Technology is the application of science to the production of goods and services. Automation is often included with technology. It involves producing goods and services with machinery rather than by hand labor; that is, goods and services are produced automatically. In effect, technology and automation have joined together to reduce the burden of hand labor.

Workers must be able to use complex machinery. They must also be able to adapt their skills to using the new machinery that is constantly becoming available. Some workers may be replaced by new machinery. When this occurs it may be necessary for them to secure employment in another occupation. It may also be necessary to learn new skills.

Worker Using a Formed Plywood Press. (This machinery presses cabinets for television sets.) (Courtesy MPI Industries, Jackson, Mississippi.)

A good example of the effect of technology and automation on work is the invention and perfection of farm machinery, especially the reaper. A reaper is a machine that harvests grain (wheat). Sometimes they are known as combines. The reaper was developed by Cyrus McCormick in 1831. Before 1830 nearly 56 man-hours were required to produce an acre of wheat. Since then considerable improvements have been made. Machinery to till the soil and plant the seed has also been perfected. Today an acre of wheat can be produced with about two man-hours of labor.

A few of the major inventions that have helped to advance technology are as follows:

DATE	INVENTION	INVENTOR	COUNTRY
3000 B.C.	Wheel	Unknown	Asia
105 A.D.	Paper from pulp	Ts'ai Lun	China
1793	Cotton Gin	Eli Whitney	United States
1807	Steamboat	Robert Fulton	United States
1831	Reaper	Cyrus McCormick	United States
1834	Steel Plow	John Deere	United States
1840's	Telegraph	Samuel Morse	United States
1845	Sewing Machine	Elias Howe	United States
1858	Steel (from pig iron)	Sir Henry Bessemer	Britain
1876	Telephone	Alexander Graham Bell	United States
1878	Incandescent Lamp	Thomas A. Edison	United States
1885	Gasoline Automobile	Karl Benz and Gottlieb Daumber	Germany
1925	Frozen Food Process	Clarence Birdseye	United States
1948	Transistor	William Shockley, John Bardeen, and Walter H. Brattain	United States
1953	Heart-Lung Machine	John H. Gibbon, Jr.	United States

Skill Requirements. The amount of knowledge and skill required to do certain work has increased. In early America no special education or training was required. Sons usually followed the occupations of their fathers. They learned the skills for farming, forging (blacksmithing), operating a store, and the like, from their fathers.

Today it is often necessary to go to special schools which provide education and skill-training. These schools include universities, colleges, and vocational-technical schools. Many vocational-technical schools have opened in recent years.

Skilled persons must also be willing to learn new skills. The trend is toward greater and greater amounts of education prior to beginning work. Persons with greater education and skill usually begin employment in a more advanced job and at a higher level of pay.

2. What kinds of agencies employ workers?

Generally, all persons are employed by either public or private agencies. The major distinction between them is whether or not they are designed to produce a profit. Primarily, public agencies are operated by the local, state, or federal governments. Other agencies, such as religious organizations and public services, may be considered as public agencies also.

Examples of governmental agencies employing workers are:

Local government—police departments, tax offices, schools, sanitation departments, street maintenance departments, welfare and social services offices, and others.

State government—highway maintenance departments, tax collection agencies, law enforcement agencies, inspection and licensing departments, and others.

Federal government—armed forces, agriculture, secret service, post office, housing and development, international agencies, and others.

Private agencies, or businesses, are usually established to make a profit. The profit goes to the person or persons owning it. Private businesses may be owned by an individual, partnership, corporation, or cooperative.

It should be noted that all private agencies are not designed to make a profit. A few non-profit private agencies exist. These usually exist to perform services that might be performed by the government.

Examples of private agencies and businesses are: grocery stores, real estate sales agencies, automobile dealers, welding shops, service stations, and industrial corporations.

Businesses are established to produce either goods or services. Goods are wares. Collectively goods are known as merchandise. Examples of goods include clothing, food, and automobiles. All of the items that are shelved in a store are goods. A service involves labor but not the production of tangible goods. Examples of services include those performed by laundries, funeral homes, and janitorial workers.

3. How are businesses organized?

Businesses are organized so that jobs vary considerably. Much of the variation is based on degrees of responsibility, skill, and capacity. Every business has one or more top-level managers. These persons are responsible for planning and management. The top level managers have people working under them to assist in implementing the plans. Sometimes these are known as mid-management jobs. Beneath these are technicians and skilled, semi-skilled, and unskilled workers. Persons just beginning work usually start in a lower level job. Advancement to a higher level is based on how well one does his job.

Unskilled Jobs. No special education or training is required for unskilled jobs. Persons working in these jobs need to be able to follow instructions accurately. The work involved usually is simple. With many people their first job is unskilled. It is possible for unskilled workers to move into semi-skilled jobs if they are diligent and willing to learn.

Semi-skilled Jobs. A small amount of training may be required for semi-skilled jobs. Experience gained in an unskilled job may be all that is needed. At this level some people learn the skills required for a skilled job.

Skilled Jobs. Special training and experiences are usually required to work in a skilled job. The training may be received through a period of apprenticeship, on-job work, or attending a vocational school.

Technical Jobs. Special education and training are usually required for a job as technician. A practical knowledge of science and mathematics is needed. Education for technical jobs usually involves two years of schooling beyond high school. Many persons in these jobs have attended technical schools.

Professional Jobs. Generally, a degree from a four-year college is required to enter professional jobs. Sometimes masters and doctors degrees are required.

Managerial Jobs. The top managerial jobs are usually filled by persons with considerable experience and education. These persons must be able to make decisions and have them carried out. Persons in lower-level jobs are usually involved in carrying out the decisions of managers.

Small businesses may not have workers specifically employed at all levels. However, there is usually a manager and those who assist him in performing the functions of the business.

4. *What is the possibility of owning your own business?*

Free enterprise is said to be a part of the American way of life. In effect, it means that anyone may organize and operate a private business for profit. However, the government may intervene if a business threatens either the economy or national defense.

Many different kinds of single owner businesses are found. Some of these are large and some are small. Businesses usually begin small. If successful, they may grow into large businesses requiring considerable managerial talent. Examples of businesses frequently owned by one person are drugstores, medical clinics, grocery stores, flower shops, and restaurants.

The trend in recent years has been for businesses to grow larger in size and smaller in number. For example, many small independently-owned grocery stores have disappeared. These have been replaced by large supermarkets owned by corporations. This has occurred because of a number of reasons. Larger stores sell more goods. In turn, because of large quantities of goods bought to sell they are able to buy from producers at reduced prices. The reduced prices are passed on as savings to shoppers. Small stores are frequently unable to compete.

This is not to say that an individual cannot successfully operate a business of his own. He can. But, he must realize that it is difficult to compete in price with big businesses. To be successful, a small business must offer quality merchandise at a reasonable price along with good service. Personal interest and friendliness with customers also help small businesses to be successful.

A popular way of owning a business is to obtain a franchise from a large company. An individual owns the business and yet has the advertising and promotional benefits of the larger company. Also, the larger company may serve as the supplier of the products to be sold or produced. Examples of such businesses are hamburger shops, gasoline stations, and drive-in grocery stores.

Instead of owning a business, many persons own stock. An owner of stock owns a share of the business. The returns one receives on the stock are proportionate to (1) the amount of stock owned and (2) the percentage of dividends paid. Stockholders receive dividends only if a profit is made and the board of directors authorizes the payment of a dividend.

5. *What is the trend in working conditions?*

Changes in the world of work are reflected by working conditions. Working conditions include such things as the following:

Number of hours worked per week
Hazards of a particular job
Environment in which work is performed
Nature of the work

Length of Work Week. The forty-hour work week is well established for many occupations. Some occupations require more hours per week, especially sales and retail store occupations. The forty hours is usually worked over a period of five days. A normal work day is eight hours. Frequently, persons working more than forty hours a week receive additional pay, known as overtime pay.

Several trends affecting the work week are currently underway. One of these trends involves working forty hours during a four-day period. Ten hours are worked each day. In the larger cities, a number of retail stores are employing persons to work on the weekend and two other days only. The reason: Retail stores have a much larger volume of business on the weekend than during the week.

Another trend is to reduce the work week to less than forty hours. Certain industries, especially mining, are moving in this direction. In the not-too-distant future the work week may be reduced to thirty-five hours—five days at seven hours per day.

The trends in length of work-week mentioned here affect persons employed in all except the professional occupations. The length of work week for professional workers has not been reduced. It appears that it will not be reduced in the near future. In fact, many persons in professional occupations work considerably more than forty hours per week.

View of Workers and Working Conditions in a Modern Cabinet Plant. (Courtesy MPI Industries, Jackson, Mississippi.)

Working Hazards. Certain occupations have more risk of physical danger than others. Employers are increasingly concerned with the safety and welfare of their employees. Laws have been passed to aid in protecting workers from danger. These apply to the wearing of certain clothing, inspection of the area in which the work is performed, and other conditions of work. A problem in some industries is noise. Sometimes the noise will become so great that the hearing of workers is damaged. Ear plugs or other devices are frequently used. An example of this is work with a ground crew at an airport where jet planes taxi about. With increased automation and use of powered equipment, noise is likely to become a greater problem. Currently, various regulations limiting noise are being imposed in an attempt to reduce the danger excessive noise may cause.

Working Environment. There are two main areas of work environment: (1) social and (2) physical. The social conditions of work refer to the relations of workers with each other. The tendency is for businesses to become larger with more workers. It is necessary that one be able to work well with other persons. This requires patience, understanding, and a willingness to help the others.

Physical conditions of work include temperature, humidity, dust, and fumes. The trend is for inside places of work to be air-conditioned and humidity controlled. Dust and fumes are removed from inside work areas by exhaust fans. It is not as easy to control the environment of outside work; neither is it as critical since dust and fumes are moved away by wind. More emphasis is being placed on pollution; therefore, industries will need to install devices which make exhaust fumes and other by-products harmless.

Nature of Work. This refers to what one actually does at work. Business and industry are becoming more automated. The equipment and machinery being used will become more complicated. This means that workers must have greater knowledge and skill. Workers must also be flexible and willing to adjust to new equipment.

The trend toward increased automation will replace some of the jobs involving considerable hand labor. More service-producing occupations will arise. The proportion of workers in goods-producing occupations will decline. More persons will work in occupations that "care for people," i.e., health and recreational occupations. In short, the world of work is becoming more "people-oriented."

6. *What is the place of labor unions in the world of work?*

Many workers belong to labor unions. Labor unions are the agents, or go-betweens, for workers in dealing with their employers. The purpose of unions is to secure benefits from employers for employees. Members of unions feel that they receive job security and protection through membership. Wage increases and other benefits frequently have come about as the result of union activity. More than 20 million persons now belong to unions in the United States.

The process used in securing benefits is known as "collective bargaining." The right of workers to bargain as a group is protected by law. In order to bargain, the union must be recognized by the employer as the negotiating agent. This is known as "recognition." Items frequently included in bargaining are wages and fringe benefits. Power used by workers to gain demands is in the form of strikes and related pressure tactics. The outcome of bargaining is a "contract" which contains a list of specific agreements. A contract also usually contains a grievance procedure.

Unions were started by tradesmen in an attempt to secure improved working conditions. Some of the first groups to unionize were concerned with carpentry, shoemaking, and printing. Today, unions include many different occupations ranging from the unskilled to the professions.

A brief outline of the historical development of labor unions in the United States is shown below:

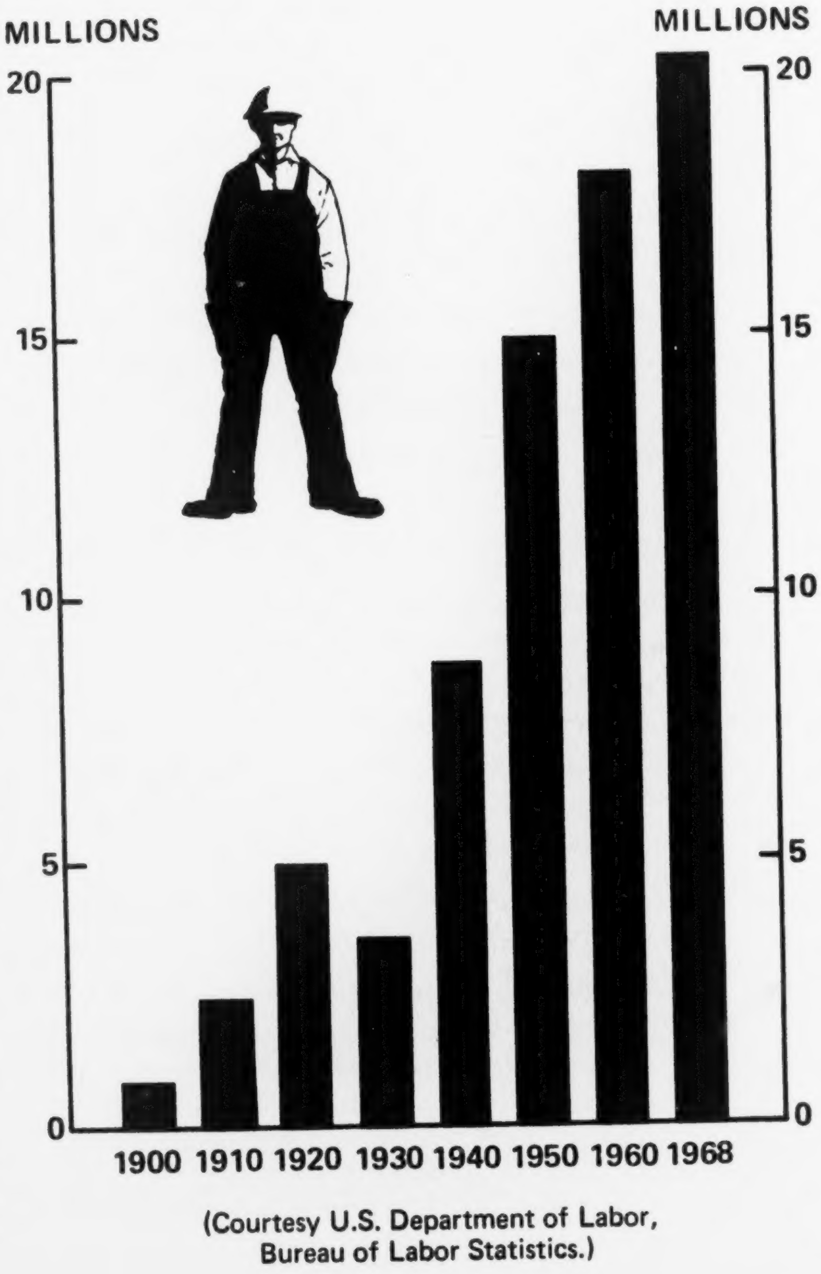
1778	New York City printers negotiate an increase in wages.
1791	Philadelphia carpenters strike for a 10-hour-day and additional pay for overtime.
1834	First attempt to form a national labor federation.
1842	Labor unions held legal by Massachusetts courts.
1868	First 8-hour-day law by federal government.
1870	First written contract between coal miners and operators.
1874	First use of union label made by cigar makers.
1882	First Labor Day celebration.
1886	AFL formed.
1902	Significant strike by mine workers.
1916	Child Labor Law enacted.
1931	Davis-Bacon Act provided for the payment of prevailing wage rates to construction workers on government contract.
1933	National Industrial Recovery Act endorsed collective negotiations.
1935	CIO formed.
1940-1947	Unions became very powerful and held many strikes.
1947	Taft-Hartley Act passed to restrain power of unions.
1948	Mississippi became the 48th State to enact workmen's compensation laws.
1955	Merger of AFL and CIO.
1962	Executive Order 10988 was issued by President Kennedy guaranteeing federal employees the right to join organizations. The right to strike was denied.
1965	Mississippi enacted a "Right to Work" Law.
1971	President Nixon suspended the Davis-Bacon Act.

Labor unions are organized so that there are local, national or international, and federated unions. Direct membership is held in local unions. Membership is indirect in national and federated unions. Dues are paid for union membership. Part of the dues goes to the local and part to the national unions. Dues may be deducted by the employer from the pay check. This is known as "check-off." Dues may be as much as $30 or more each month.

Most labor unions are now affiliated with the AFL-CIO. This giant union was formed by the merger in 1955 of the AFL (American Federation of Labor) and CIO (Congress of Industrial Organizations). The AFL was founded to further the interests of skilled workers in certain occupations. It limited itself to craft or trade members, such as welders and carpenters. The CIO was founded to represent all workers in an industrial union with membership not related to any specific skill, but including all workers in an industry. Unions not affiliated with the AFL-CIO are known as "independent unions."

Local unions usually employ a small staff to handle the affairs of the union. A "business agent" is employed as the general manager of the local. If necessary, the business agent may have one or more assistants. Within businesses, "shop stewards" may be elected to observe working practices. In effect, the shop stewards work right along with the other workers but watch for violations of provisions of the contract.

Trend in Union Membership



(Courtesy U.S. Department of Labor,
Bureau of Labor Statistics.)

Unions usually represent workers employed at levels less than managerial. Not all businesses have workers who are members of unions. An "open shop" is a business which does not require union membership for beginning or continuing employment. A "closed shop" is a business which employs only union members. Under certain conditions closed shops may hire persons who are not union members provided membership is sought before beginning work. In Mississippi, it is unlawful for a closed shop to operate. A person is not to be denied work on the basis of membership or nonmembership in a union. This is known as the "Right to Work" Law.

Collective bargaining is not limited just to unions. Some professional organizations recently have become active in bargaining. In addition, some of the unions now include professional workers in their membership.

7. What is the place of apprenticeship training in the world of work?

Apprenticeship training is used to train people in certain trades. It involves learning on the job under the supervision of a skilled craftsman. Normally, an agreement between employer and employee is used to insure adequate training. Labor unions may be active in apprenticeship training programs. Apprenticeship varies considerably in different parts of the United States. It is not as formal in Mississippi as in some other states.

Certain terms common to apprenticeship training are as follows:

Apprentice—one who is learning an art or trade in an apprenticeship program.

Journeyman—a worker who has learned an art or trade, usually in an apprenticeship program.

Journeywork—work done by a journeyman.

Masterbuilder—a highly skilled worker who is qualified to supervise building construction.

Master mechanic—a mechanic who is a thorough master of his trade. He may be a foreman mechanic.

Foreman—the chief worker in a crew, gang, or department.

In apprenticeship training, it is important that a formal written agreement be used. If no written agreement exists the apprenticed worker may not receive sufficient training. When no agreement to train an apprentice exists he is correctly designated as a helper or learner. An apprenticeship agreement should cover the following:

(1) Schedule of work—A schedule listing the tasks and skills to be learned should be used. Normally, skills learned at first are simple, and gradually become more complex.

(2) Supervision—An apprentice should be under the supervision of a qualified journeyman.

(3) Related instruction—Instruction related to the skills of the trade should be provided in a vocational school or within the business. A minimum of 144 hours each year of the apprenticeship is usually required.

(4) Program registration—An apprenticeship program should be registered with the appropriate governmental agency.

(5) Wage schedule—A wage schedule should be used that contains gradual increases until journeyman is reached.

To be eligible for an apprenticeship program, several requirements must be met. Usually, a high school education is needed. By attending a vocational school the length of the apprenticeship period can be reduced. An apprentice should be in good health and be 16 to 24 years of age. It is best if the person is interested in mechanics and has a background in mathematics and science. It is a good idea for an apprentice to be recommended by a person already in the trade rather than an outsider to the trade.

Several trades that require apprenticeship and the number of years required are shown on the next page:

Trade	Years of Apprenticeship
Agricultural equipment mechanic	3-4
Airplane mechanic	3-4
Automobile body repairman	3-4
Automobile mechanic	3-4
Baker	3
Barber	2
Brewer	2-3
Bricklayer	3
Butcher	3
Cabinetmaker	3-4
Candymaker	3-4
Carpenter	4
Electrician	4-5
Glazier	2-4
Jeweler	3-4
Lithographer	4-5
Mason	3
Painter	2-3
Plasterer	3-4
Printer	5-6
Plumber—pipefitter	4-5
Roofer	2-3
Tailor	4
Tile setter	3

8. *What wage payment practices are followed?*

Wage payment practices vary considerably. Variation is not only found between different occupations but also between employers. The length of pay periods varies as well as the bases for payment.

A "pay period" is the length of time from one pay day to another. Pay periods are usually one week, two weeks, or one month in length. Occasionally it may be one day; that is, workers are paid at the end of each work day. Mississippi law specifies that workers in certain industries must be paid every two weeks. Pay may be in the form of a warrant (check) or cash. Part of the pay may be in goods or services. An example is when an employer provides free housing for an employee. However, such housing is frequently a fringe benefit.

In general, wages are paid in one of three ways: (1) hourly rate, (2) piece rate, and (3) salary. A combination of any two of these may be used. The earnings of self-employed persons are partially determined by all three.

Hourly Rate. Workers may be paid on the basis of the number of hours they work. Normally a worker will work 40 hours per week. In many jobs persons working more than 40 hours are entitled to overtime pay. Overtime pay applies only to the hours worked above 40. The rate is 1½ times the regular rate per hour. For example, a worker covered by overtime provisions works 45 hours a week. If the regular rate of pay per hour is $2.00, the pay for the week is computed as follows:

40 hours @ $2.00	$80.00
5 hours @ $2.00 multiplied by 1½, or $3.00 per hour	15.00
Total gross wages for a week	$95.00

Examples of occupations in which the hourly rate may be used are: welder, carpenter, mechanic, and typist.

Piece Rate. The piece rate is based on productivity. It is concerned with how many pieces of a certain item are produced or sold. In sales work the piece rate is known as "commission." The worker is paid a percentage of the selling price of goods.

Beginning workers in businesses that use the piece rate may be started at the minimum wage. After a period of training the basis for pay may be changed to the piece rate. Businesses manufacturing goods prefer the piece rate because it is an incentive for greater production. The more a person produces the greater his total wages.

Examples of industries which may use the piece rate are garment (clothing) manufacturers and small appliance assembly plants. Typists may be paid by the piece rate also; that is, so much per page typed.

Sales persons working on a commission basis may also receive a fixed salary. An example of such an occupation is the automobile salesman. These sales persons usually receive a small fixed salary in addition to a commission.

Salaries. A salary is a fixed amount of pay regularly received for work. Professional, technical, and managerial workers are frequently paid on a salary basis. The nature of the work of certain occupations does not make it possible to pay on an hourly or piece rate. In some of the salaried occupations no extra pay is received for overtime work.

Examples of occupations in which salaries may be used are: teacher, secretary, nurse, and accountant.

9. *What fringe-benefit practices are followed?*

Fringe benefits are those received in addition to normal wages or salaries. They are also known as "fringes," "employee benefits," and "employee services." These additional benefits are provided in order to make certain occupations more attractive to employees. Fringe benefits may also carry responsibilities. It is difficult to place a dollar value on fringe benefits. Benefits vary from one company to another and within occupations. Fringe benefits are paid for by employers. Many times fringes amount to as much as $20.00 for each $100.00 paid in salaries. Fringe benefits can be thought of as something extra received for working. Some of the more common benefits are:

Vacations—May be either paid or unpaid. A paid vacation is one in which the worker continues to draw a salary while on vacation. Length varies from one to three weeks or more each year. Employees must usually work for a while before being eligible for vacations. Unused vacation days may accumulate from one year to another. Policies regarding vacations vary considerably.

Sick leave—Permits a worker to continue to draw a salary when unable to work due to illness. The amount of sick leave is usually limited to several days each year. Unused sick leave may accumulate from year to year. Workers should use sick leave only when sick; some employers require workers to be under the care of a physician to be eligible for sick leave. There is a great deal of variation in sick leave policy.

Retirement—Benefits are to reward workers for a number of years of service. The age at which persons retire varies; however, it is usually age 65. Some employers base retirement on the number of years of work, usually 20 to 30. Retirement benefits are paid for by both the employee and employer. A worker may increase his retirement benefits by making larger contributions during his working years.

Social Security—Ninety percent of all workers are covered by the Social Security Law passed by Congress in 1935. Each worker is assigned a number known as his social security account number. A person's name may change by marriage, adoption, or court order, but his number remains the same. Social Security is administered by the federal government. The money to finance the program is obtained by a payroll tax levied on employees and their employers.

Additional Training and Education—A majority of companies encourage their employees to further their education and will pay part, or in some instances the entire cost, of this education. The most common way of obtaining additional education or training is by attending night classes, frequently in a vocational and technical school. This training can also be obtained from correspondence courses. Some companies offer in-service training for their employees.

Rest Periods—Most companies provide a 10- or 15-minute break twice daily, morning and afternoon. Refreshments may be free or the employee may be required to pay a small cost, depending upon the policy of the company. Rest periods are also known as "coffee breaks."

Insurance—Group insurance plans are offered by many companies. The insurance coverage is extended to the employee's immediate family (including husband or wife, sons and daughters). Coverage frequently includes life insurance, accident and sickness insurance, disability benefits, hospitalization and surgical coverage, and surgical benefits for dependents.

Other benefits that are commonly found are:

Profit sharing
Parking facilities
Unemployment insurance
Paid holidays
Recreation facilities
Cafeteria service
Credit unions
Sabbatical leave
Travel allowances

10. What legal regulations apply to workers?

Laws have been enacted to protect both employers and employees. Such laws help to improve the conditions of work. It is possible to divide the legal regulations pertaining to work into groups: State and Federal.

State Legal Regulations

The following is a list of the major features of the laws of Mississippi pertaining to work:

1. Denial or abridgement of work—The right of a person to work shall not be denied or abridged on account of membership or nonmembership in any labor union or labor organization ("Right to Work" Law).
2. Officers of labor unions—Aliens, communists, or persons convicted of certain crimes are prohibited from holding offices in labor organizations or participating in labor-management functions.
3. Work of children—No boy or girl under the age of 14 years shall be employed or permitted to work in any mill, cannery, workshop, factory, or manufacturing establishment. These provisions do not apply to a fruit or vegetable cannery.
4. Hours of work—No boy or girl between the ages of 14 and 16 years shall work in any mill, cannery, workshop, factory, or manufacturing establishment more than eight hours in one day, or more than 44 hours in any one week. Persons of this age are not to work in or be detained in any of the above establishments between the hours of 7:00 p.m. and 6:00 a.m.
5. Hours of work for women—No female is to work over ten hours a day or 60 hours a week, except in case of an emergency. This does not apply to domestic servants.
6. When to pay certain employees—Businesses engaged in any kind of manufacturing which employ 50 or more workers shall pay their employees every two weeks or twice during each calendar month. The pay dates frequently used are the second and fourth Saturday. This same provision applies to public service corporations.
7. Discounting checks—The full amount of a trade check issued in payment for labor shall be paid to an employee. No discounts are permitted when the check is exchanged for cash.

Federal Legal Regulations

The major federal law relating to workers is the Fair Labor Standards Act. This law was originally enacted in 1938. Since enactment it has been amended several times.

The Fair Labor Standards Act applies equally to men and women. Workers in factories, offices, and homes are covered. Some agricultural occupations are not included. All sizes of businesses are included. Both full- and part-time workers are covered. Five areas are included: (1) minimum wage, (2) maximum hours, (3) overtime pay, (4) equal pay, and (5) child labor standards.

1. Minimum wage—This provision specifies the minimum wages that can be paid. The minimum hourly wages for most occupations is $1.60.

The minimum for certain agricultural work is $1.30. Certain types of workers may be paid at a lower rate.

2. Maximum hours—The maximum hours provision is concerned with overtime. A normal work week is 40 hours.
3. Overtime pay—Workers who work more than 40 hours per week must be paid 1½ times the regular rate of pay for all hours over 40. Certain agricultural work is exempt from overtime provisions.
4. Equal pay—All workers are to be paid at the same rate for the same work. Employers cannot discriminate on the basis of the sex of workers. Different rates of pay may be used if the difference is based on seniority, merit, or production. This provision is applicable to all workers subject to minimum wage provisions.
5. Child labor standards—Sixteen years of age is the minimum for employment in most occupations. This includes agricultural work during school hours or any agricultural occupation declared to be hazardous. A minimum age of 18 is applied to hazardous nonagricultural occupations. Persons who are a minimum of 14 years of age may work outside of school hours in certain nonmanufacturing and nonmining occupations. The Secretary of Labor determines which occupations are hazardous. The child labor provisions do not apply to persons under age 16 employed by their parents in agricultural or in nonmanufacturing and nonmining occupations.

Two other recent federal laws applicable to workers are the Federal Wage Garnishment Law and the Age Discrimination in Employment Act.

1. The Federal Wage Garnishment Law became effective July 1, 1970. This law limits the amount of an employee's earnings which are subject to garnishment. It also protects a worker from dismissal because of garnishment for any one indebtedness. "Garnishment" refers to a legal procedure for withholding money from a pay check to pay a debt. Not more than 25 percent of the disposable weekly earnings may be withheld. "Disposable earnings" refers to the amount remaining after income tax, social security, and the like, have been deducted.
2. The Age Discrimination in Employment Act is designed to protect workers between the ages of 40 and 65 years. It applies to employers with 25 or more members, and employment agencies serving these employers and unions. Only the businesses involved in some way in interstate commerce are covered. This act was passed in 1967.

Additional information on the legal regulations affecting workers is available from:

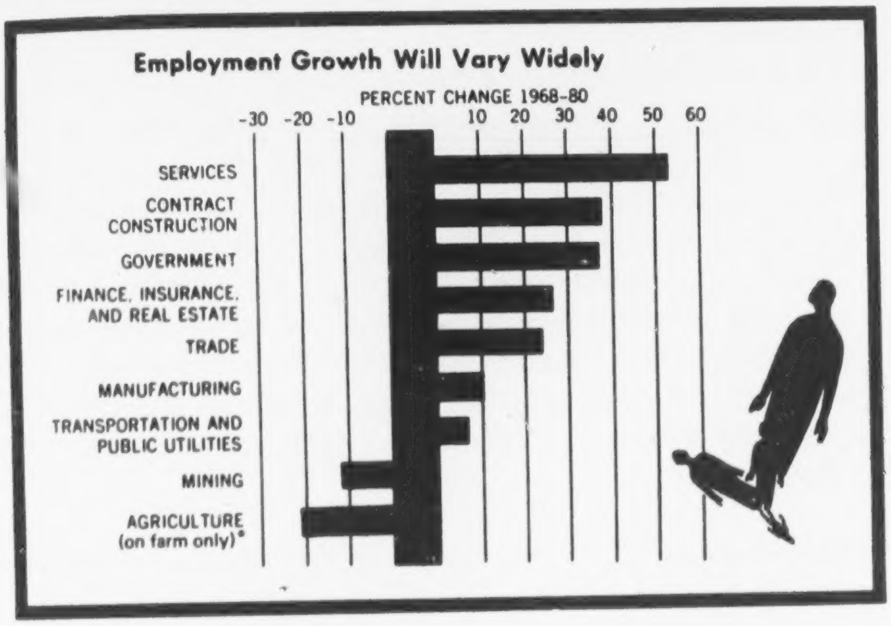
State: Mississippi Employment Security Commission
P. O. Box 1699
Jackson, MS 39205

Federal: U.S. Department of Labor
Room 675 Milner Building
210 South Lamar Street
Jackson, MS 39205

11. What occupations are most promising? Least promising? Why?

Changes in the world of work occur. These changes cause some occupations to gradually go out of existence. Also, new occupations emerge. It is usually easier to advance in an emerging occupation than in older occupations which are declining.

The greatest growth in jobs in the next few years is expected to occur in the service areas. Employment by various levels of government will increase. Recreational industries are expected to grow considerably in the years ahead. Currently, much emphasis is being placed on pollution, ecology, and environment. Occupational opportunities will probably grow rapidly in these areas. The trend is also toward more white-collar occupations. The illustration below depicts the predicted change in employment in 1980 from 1968.



(Courtesy U.S. Department of Labor.) *Amended.

The decline in agricultural employment shown in the above chart relates only to the number of farmers and farm laborers. Although farm employment is expected to drop sharply in the next decade or so, farm output is forecast to rise by about one-third from 1970 levels. Such increases in farm output will necessitate steady increases in employment in agricultural services and industries, many of which are included in other employment categories of the chart. In this way the chart distorts the expected growth in employment opportunities for those professionally trained in the many phases of agriculture.

Workers are needed as replacements. Older workers retire and die, making room for younger workers to enter and advance in an occupation. The amount of formal education necessary to replace a retiring worker has increased and is continuing to increase.

In addition to the future of a particular job, consideration should also be given to how well one is able to advance to other jobs. Some jobs are said to be "dead-end." That is, they do not lead anywhere. Dead-end jobs are important in the world of work but usually do not provide opportunities for advancement. Some jobs are said to be "status quo." In these, opportunities are available but the potential for growth is limited. Other jobs are said to have a bright future. These are the jobs which will provide the greatest opportunity for advancement and progress. Railroad and mining jobs are examples of "dead-end" jobs. Pharmacist, mason, and baker are examples of "status quo" jobs. Examples of bright future jobs include physician, attorney, and dentist.

12. What relationship does citizenship have to the world of work?

Persons who are successful in the world of work usually have a basic understanding of citizenship. Successful workers usually make contributions of time, energy, and money to community activities. They also derive benefits from these contributions. Thus citizenship is both a giving and taking process.

Citizenship is made up of many things. It begins with worthy home membership and self-respect. If a person does not have respect for himself then no one else will have respect for him. Self-respect encompasses such things as punctuality, personal appearance, self-confidence, honesty, and other related traits.

The world of work involves many civic responsibilities. These responsibilities may be considered a part of an individual's career. Working with youth groups is a good example. This work may involve managing a baseball team that is sponsored by the employer or taking part in other employer-employee related functions. The time spent in performing these related functions can be both educational and rewarding.

Good citizenship involves registering and voting in local, state, and federal elections. The voting right is abused when it is not used. The right to vote has many responsibilities and should not be taken lightly. Voting is both a right and a privilege and is the responsibility of every citizen of this country. Many states now allow 18-year-olds to vote. Students can begin their voting responsibilities by taking part in the school election of class officers, favorites, and other similar activities.

A person who practices citizenship will be better able to take his rightful place in the world of work. He will be well on his way toward becoming a better citizen.

13. What is the role of avocational interests?

Avocational interests are interests other than those concerned with an individual's occupation. Such interests are commonly known as "hobbies" or "leisure-time activities." These are to be contrasted with vocational interests.

It is important that work be balanced with play. Leisure time activities are not a waste. Actually, the efficiency of a worker may be increased by diverting some time to activities other than work. The health and well-being of an individual are also related to the way time is used. In essence, "variety is the spice of life."

Activities for leisure may be with groups or on an individual basis. Activities with other persons have a definite place in each person's life. Group activities should usually be balanced with individual activities. Also, a certain amount of physical exercise is needed for health purposes. Various leisure activities can produce the needed exercise. Individual activities are also beneficial. Almost everyone needs a place and time in which to be by himself for thought and reflection.

Examples of avocational, or leisure time activities are as follows:

Collecting (stamps, coins, bottles, etc.)
Sports
Hunting
Fishing
Gardening
Playing cards
Attending theatrical productions
Camping
Hiking
Auto racing
Sewing
Knitting
Boating
Swimming
Skiing
Reading
Painting (art)
Playing musical instruments
Dancing

Review Questions:

1. How has the place, or location, of work changed in the United States?
2. How does technology affect a worker?
3. How do public and private agencies differ?
4. What are goods? services?
5. What levels of work are found in business? Explain each.
6. What is free enterprise?
7. What is meant by "workweek"? "overtime"?
8. What is the main purpose of labor unions?
9. What is an apprentice? journeyman? foreman?
10. What are fringe benefits?
11. Why are some occupations more promising than others? List some promising occupations.
12. What are avocational interests?

Suggested Activities:

1. For those who like to read, the following book is suggested:
   The Century of the Reaper by Cyrus McCormick

2. Resource persons may be used if appropriate. The following are examples:
   A representative of a local labor union to discuss activities of labor unions.
   A representative of the Social Security Office to discuss what social security is and does.
   A representative of a local industry to discuss levels of employment in the industry.
   A journeyman or master tradesman to discuss apprenticeship programs.
   A representative of the Mississippi Employment Security Commission to discuss wage payment practices or the trend in occupations, i.e., which are most promising and least promising?
   An owner of a small business to discuss some of the experiences and problems encountered by owners of businesses.

3. Select one of the items listed below and learn how it was developed. Prepare a poster or write a paper which outlines your findings.
   Automobile
   Television
   Wheel
   Telephone
   X-ray process
   Sewing machine
   Heart-lung machine
   Typewriter
   Laser beam
   Gasoline
   Radio
   Hybrid corn
   Or any other invention which interests you

4. Investigate the following kinds of businesses. Prepare a report which explains each.
   Sole (or individual ownership)
   Corporation
   Partnership
   Cooperative

5. Divide the class into several small groups. Each group is to establish a fictitious partnership, corporation, or cooperative to manufacture a product or provide a service. The legal aspects and functioning of the particular kind of business to be formed should be investigated. The procedure for establishing the business should be outlined in a paper or report to the class.

6. Interview persons employed in different levels of work. Inquire as to how each level relates to the others. Determine how advancement occurs.

7. Develop a list of occupations in your local community for which a period of apprenticeship is required. Determine the normal length of apprenticeship.

8. Develop a report which describes how the average worker's kind of work has changed in Mississippi. Start your report at a time prior to 1800.

9. Develop a report which describes how transportation, i.e., the automobile, has changed where people work and what they do at work.

10. How has the use of land within one mile of your home changed in the last five years? Report your findings to the class.

11. Make a list of new businesses that have opened in your local area in the last year. Determine the kinds of jobs found in them.

12. Compile a list of all the avocational, or leisure time interests of students in your class. Place a check (✓) by those in which you participate or would like to participate.

IV. Determining How To Be A Success

You can be a success! Most people want to be successful in their jobs. People should attempt to enter occupations in which they believe they will be successful. Success depends upon a number of things. After entering an occupation, the way the duties are performed will ultimately determine success.

The following questions will be answered in this unit:

1. **What is success?**
2. **What is motivation? How is it related to success?**
3. **What are the causes of failure in work?**
4. **How can failure in work be prevented?**
5. **Why is it necessary to plan a career?**

1. *What is success?*

Everyone wants to be successful. Success for an individual is gradually achieving the goals that he has set. These goals are set by the individual himself and not by someone else. An individual should set his own goals, since he is the one who must achieve them. Goals should be realistic and challenging. They should also be revised from time to time. Goals that were set a little too high may need to be lowered. New goals are needed when old goals are achieved.

Success is measured in different ways. To some persons success is doing work efficiently and getting promotions. Others measure it in terms of material wealth. And others, especially young workers, frequently measure success in terms of how quickly they are able to obtain a sporty new automobile. Each person needs to formulate for himself his own personal definition of success.

One of the first successes in the world of work is simply getting a job. Some people have difficulty achieving this first success. A good example is the unemployed person. A person cannot be successful in the world of work until he has a job.

Success with a job depends upon how it is performed. The key to success is a positive attitude. The productivity of a crew or department may be related to the attitude of its individual workers. If a person likes his work, he will usually have a positive attitude. To be a success, it is essential that a person like most of the activities connected with his work.

A successful worker looks for ways to be a success. He looks for ways to do a job, not reasons for saying it cannot be done. He does the best he can with every task.

Success is related to progress on the job. Promotions are given to those who have shown that they have the ability to get a job done. Likewise, increases in pay are associated with productivity.

People who are successful usually attribute their success to hard work. Enthusiasm for work and the ability to stay with a job even when it is difficult are important. Good health is desirable. However, persons with handicaps are frequently highly successful. Successful people usually indicate that luck is not very important. Sometimes it appears that people do get "breaks." But a person must be properly prepared and motivated to make the most of a "break" when it comes.

Dignity is to be found in almost all occupations. Some of the occupations which are looked down upon by certain people are vital to the existence of man. For example, the garbage collector is essential. Without someone to pick up trash and garbage, our country might soon fall apart. Diseases and pests would increase tremendously. Much illness and many deaths would result. The successful worker remembers that there is dignity in all work and attempts to perform well.

2. *What is motivation? How is it related to success?*

Motivation is the incentive to do a given thing. It has to do with the direction and control of human energy. A person who vigorously goes about a job is often said to be highly motivated. Motivation is closely related to success. It is associated with ambition and the desire to get a job done.

Motivation is affected by a number of factors. Most important is the environment in which work is done. The attitudes of fellow workers affect motivation. Supervisors and foremen have considerable influence on the level of motivation among workers. Complimenting fellow workers on a job that is well done will increase their motivation. It also enhances the productivity of a work group.

Success motivates people. Success in a beginning job frequently results in people doing more and better work. In brief, they are more productive. Increased productivity may result in pay increases and promotions. Just as success motivates people, motivated people are more likely to be successful.

Persons who lack sufficient motivation may not be successful in their work. In fact, motivation largely determines whether a person succeeds or fails in the world of work.

3. *What are the causes of failure in work?*

A person may fail in his work for a number of reasons. He might be a failure in a particular job and yet be successful in a career. Sometimes the success or failure of an individual may be beyond his control. This, however, is usually not the case. A person determines his own future through the way he works and his attitudes toward work and his fellow workers.

It is important to think positively—to think about success. With this in mind, a brief list of some of the things that might contribute to failure in work is presented below:

Lack of ability to get along with people
Lack of education, skill, and confidence
Lack of ability to adjust to change
Lack of maturity and common sense
Poor attitudes toward work
Improper dress and personal appearance
Dishonesty
Addiction to drugs, alcohol, etc.
Lack of productivity
Dissatisfied family
Choice of marriage partner

4. *How can failure in work be prevented?*

Failure in work may be due to the personal traits of an individual. It may also be due to a lack of planning and preparation for entering the world of work. Some factors that contribute to success are discussed below.

Ability to get along with people. More people lose their jobs because they do not get along with people than for any other reason. To get along with other people a person must first attempt to understand himself. If an individual understands himself, he is better able to adjust his behavior toward other people. Another important aspect of getting along with people is to look for something to like in them. Be interested in them. Show them you are interested. Be sympathetic, understanding, helpful, and complimentary.

Willingness to learn. Changes are constantly taking place in work. Successful workers must readily adjust to change. A worker needs to be flexible and to learn new ways of performing a job. Workers must also be willing to learn the way employers want work done.

Enthusiasm. A successful worker shows enthusiasm for his work. He also shows enthusiasm for the company that employs him. Enthusiasm is observed as positive energy. It is developed by concentrating on the features of work that are liked best. Of course, a worker does not always like everything about his work, but the dislikes should not be exaggerated.

Dedication to work. Success is closely associated with hard work and belief in the value of what one is doing. Persons who always do the very best they can on a job are more likely to be successful. They are the first to be considered for promotions and pay increases.

Knowledge of abilities. It is important to know what one can and cannot do. Jobs that are definitely beyond the ability of a person should not be readily accepted. If a worker is assigned a task he cannot do, he should tactfully explain that he cannot do it to the foreman. On the other hand, lack of ability should not be used as an excuse to avoid work. A successful worker is willing to try something new and always does the best he can with any job. He sticks with a job until it is done. A "quitter" is not successful.

Respect for the employer. A successful worker respects his immediate superivsor, commonly known as "the boss." A worker should attempt to please and do the job according to instructions. Work regulations should be followed as closely as possible. For example, if an employer expects workers to be at work at 7:00, they should be there by 7:00.

5. *Why is it necessary to plan a career?*

Career planning is one of the most important problems facing youth. It should start early. Students need to begin thinking of their careers while in elementary school. The last two years of high school may be spent in specific career preparation. High schools usually offer students a choice of subjects. Subjects may be vocational, college preparatory, or a part of general education. Careful consideration should be given to the courses taken. Regardless of the selections, the courses taken will ultimately contribute to career development.

Career plans need not be rigid but should allow for change. The changes may be brought about by the development of new interests, financial ability, demand for workers, and other factors. The average worker may change jobs six to eight times during his working career. These changes are normally from one occupation or job to another and do not represent a change in career. Individuals who have made proper career plans will be less likely to change careers. Career planning also aids individuals in advancing.

There are several considerations in planning a career. Probably the most important is that one knows and understands himself. An individual should give careful consideration and honest appraisal to his personal traits. This appraisal should be complete and thorough. A knowledge of one's self will make career planning more meaningful and, above all, more accurate.

The actual process of career planning begins with securing information about occupations. Acquisition of occupational information should be started early in life and be continued throughout a career. Such information is available from different sources: parents, friends, newspaper articles, teachers, counselors, and others. One must evaluate information from the various sources. Some career information may be misleading if it is oriented toward recruiting persons into the career being discussed. All occupational information must be read and interpreted with this in mind.

Individuals who do not plan their careers may wander aimlessly in the world of work. Also, persons who make selections and later change their minds may find that time and money have been lost in securing unnecessary education or training.

It is possible to compare a career with an automobile trip. Suppose a person wants to take a trip in an automobile. If the place is one to which he has never been before, he will want to plan his trip. A road map will be needed. On the map, it will be necessary for him to determine where he is presently located and where he wants to go. The next step is to plot the trip carefully. The best highways and shortest route will be chosen. After the trip is started additional information will be obtained along the way. If the new information results in a better route, the travel plans will be changed.

The same general approach tends to be as true in career planning as in planning a trip. Individuals should carefully plan their careers and required education. As new insight is gained along the way, career plans may change.

Review Questions:

1. What are some factors on which success in a job depends?
2. What is meant by dignity in work? Explain.
3. What are some causes of failure in work?
4. What are some ways of preventing failure in work?
5. Why should people make plans for their future?

Suggested Activities:

1. Make a list of the most successful people in your community. Indicate their approximate age, the kind of occupation or business in which they are engaged, and how long they have been in that particular occupation.

2. Make a list of reasons why people lose their jobs. Count the number of people you know who have lost their jobs for the reasons you listed.

3. Compile a list of activities or tasks in which you have been successful. Place a check (✓) by those which you believe are related to the world of work.

4. Invite a resource person to visit class and discuss how to be successful in the world of work. (The person chosen should be qualified to speak on this topic.)

5. List several occupations in which you believe you are interested. Investigate the requirements for entering them. Write on paper the requirements and how the requirements can be met. (Determine if this activity is related to career planning.)

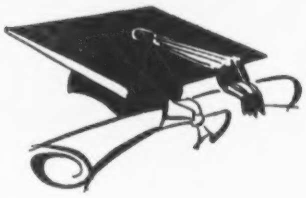
V. Preparing For A Career

Your success in a career will be influenced by the preparation you make for entering it. In turn, the career you select will be determined by the kind and amount of preparation required. A career choice may also hinge on where the necessary preparation may be obtained and how much it will cost. Of course, various sources of financial assistance are available; you will also want to know about these.

The following questions, which will aid you in understanding the preparation for a career, are answered in this unit:

1. **What preparation is needed for entering a career?**
2. **What is the sequence of education?**
3. **Where can education and training be obtained?**
4. **What is the procedure for applying for admission to a college or vocational school?**
5. **How much will the education or training cost?**
6. **What sources of assistance are available for financing education and training?**

1. What preparation is needed for entering a career?



Different careers require different levels of preparation. The level at which employment is begun is largely determined by the amount of preparation one has made for the job. It is also determined by the nature of the career and the demand for workers. In addition, the required skills for *entry* may vary considerably from those needed for *advancement.*

Preparation for a career includes several factors: education, training, experience, and maturity. Educational requirements are of two kinds. The first, basic education, is concerned with the ability to read, write, and perform basic mathematics. The second, specialized education, is concerned with specific education that prepares one for a specific kind of work. Specialized education is sometimes known as vocational training.

Certain kinds of experiences related to work or to a particular career may be beneficial. Included in these are part-time jobs, such as those held after school hours and in the summer. Persons also need to exhibit mature judgment and behavior. Maturity is largely gained through self-discipline and practice.

Today, most jobs require that a person have a high school diploma. Other jobs require education beyond high school from a vocational or technical school, junior college, or senior college. Advancement in a career is related to educational background. The level at which employment is begun is also related to the education and amount of skill the employee has.

Some jobs requiring various levels of education are listed below. For entry, these jobs do not always require the particular level of education indicated, but it is essential for advancement.

Jobs for Which a High School Education is Preferred

- Licensed Practical Nurse*
- Salesman or Saleswoman
- Cashier
- Barber*
- Shipping or Receiving Clerk
- Cook and Chef**
- Automobile Parts Counterman
- Cosmetologist*
- Hospital Attendant
- Private Household Worker
- Roofer**
- Bus Driver*
- Taxi Driver
- Routeman*
- Appliance Serviceman
- Automobile Mechanic**
- Diesel Mechanic**
- Electrician**
- Farm Equipment Mechanic**
- Millwright**
- Truckdriver*
- Asbestos or Insulating Worker**
- Carpenter**
- Bricklayer**
- Cement Mason and Terrazzo Worker**
- Construction Laborer or Hod Carrier
- Floor Covering Installer**
- Lather**
- Painter or Paperhanger**
- Plasterer**
- Plumber or Pipefitter**
- Waiter or Waitress
- Watch Repairman**
- Factory Assembler
- Automobile Painter**
- Gasoline Service Station Attendant
- Fireman
- Welder**
- Mail Carrier
- Postal Clerk
- Hotel Bellman
- Railroad Worker

* Specialized training and/or a license is needed.

** Apprenticeship training may be required. (Part or all may be obtained at a vocational-technical school.)

Jobs for Which Junior College, Technical School, or Other Specialized Training is Usually Required

- Forestry Aid
- Dental Hygienist
- Medical X-Ray Technician
- Registered Professional Nurse
- Actor or Actress
- Dancer
- Musician
- Commercial Artist
- Interior Designer or Decorator
- Draftsman
- Engineering Technician
- Surveyor
- Television and Radio Service Technician

Jobs for Which a College Education is Usually Required

- Accountant
- Advertising Worker
- Public Relations Worker
- Clergyman
- Forester
- Range Manager
- Counselor
- Engineer
- Dentist
- Dietitian
- Optometrist
- Pharmacist
- Physical Therapist
- Physician
- Sanitarian
- Veterinarian
- Mathematician
- Biological Scientist
- Geologist
- Astronomer
- Chemist
- Physicist
- Anthropologist
- Economist
- Geographer
- Historian
- Sociologist
- Teacher
- Newspaper Reporter
- Writer
- Architect
- Home Economist
- Lawyer
- Librarian
- Psychologist
- Social Worker
- Purchasing Agent
- F.B.I. Special Agent
- Bank Officer

High School Students Receiving Instruction in How to Cut a Rafter. (Courtesy Milt Lawrence, Jackson, Mississippi.)

2. *What is the sequence of education?*

Sequence is the order in which education is obtained. Lower levels of education must be completed before higher levels are attempted. Basic skills and knowledge must be learned before specialized training can be undertaken.

Education in the United States has a rather definite sequence. In the sequence, elementary school comes first, then the middle school or junior high, and then high school. Considerable time is spent in basic education at all levels. Basic education includes reading, mathematics, and the like.

In high school, students may have the choice of enrolling in certain vocational classes. These classes are designed specifically to aid a young person in entering the world of work. Examples of vocational classes in high school are accounting, agribusiness, sales and marketing, automobile mechanics, and home economics.

Some high schools have vocational departments. Others have area vocational schools in cooperation with nearby high schools. Area vocational schools may be located at a high school or several miles away. Transportation is provided for students when the vocational schools are not located at the high school they attend. Students enrolled in these schools spend two to three hours each day learning a specific area or trade. The remainder of the day they are in high school taking basic classes, such as those in communications or history. A vocational certificate may be given students who complete vocational courses. Many times students are able to take vocational courses in high school and still meet the requirements for entering a college.

Upon graduation from high school a student may enter a junior college, senior college, or vocational school. Some choose not to further their formal education at this time and enter the world of work. Frequently, adults enroll in night classes to further their education.

Junior colleges are also known as community colleges. Most junior colleges offer the same first two years of study as is normally found in senior colleges. Many students go to a junior college for one or two years (usually two) and then transfer to a senior college. In addition to regular college classes, junior colleges also have two-year training programs that lead into the world of work. These programs are usually in the vocational and technical department. There are also some junior colleges which offer only vocational and technical courses. These are known as post secondary vocational and technical schools, or technical institutes. Courses taken in a post secondary vocational school usually are not accepted toward graduation by senior colleges. A special certificate is awarded to students who successfully complete a post secondary vocational or technical course.

Senior colleges are of two kinds: colleges and universities. Universities are usually larger and have more areas of study than colleges. Also, universities usually have programs leading to advanced degrees.

Several kinds of degrees are available. Each has its own requirements. The amount of time required to obtain the degrees and the order in which they are obtained are shown below:

High School	Diploma or General Educational Development Test (GED)
	↓
Junior College (Community College)	Associate of Arts Degree (Normally requires two years to complete)
	↓
Senior College or University	Bachelor's Degree (Normally requires four years to complete)
	↓
	Master's Degree (Normally requires one to two years to complete)
	↓
	Doctor's Degree (Normally requires three to four years to complete)

3. *Where can education and training be obtained?*

A number of vocational schools, junior colleges, colleges, and universities are found in Mississippi and nearby states. Most students prefer to stay in Mississippi. Students who go to other states are required to pay additional fees. These are known as out-of-state or nonresident fees. Likewise, students who come from other states to Mississippi are required to pay out-of-state fees.

Education and training which lead to a wide variety of jobs is available in Mississippi. However, the training for certain highly specialized jobs in which few people are employed may not be available.

In addition to the public, tax-supported schools, a number of private vocational schools and colleges exist. Private vocational schools and colleges depend almost entirely upon tuition for their support. This means that the cost of attending a private institution is usually higher than the public ones. Also, some private schools lack the necessary equipment and facilities to provide up-to-date instruction. It must be noted, however, that some private colleges and vocational schools do an excellent job of preparing a person to enter the world of work.

The locations of the secondary vocational schools, junior colleges, colleges, and universities in Mississippi are shown on the next pages.

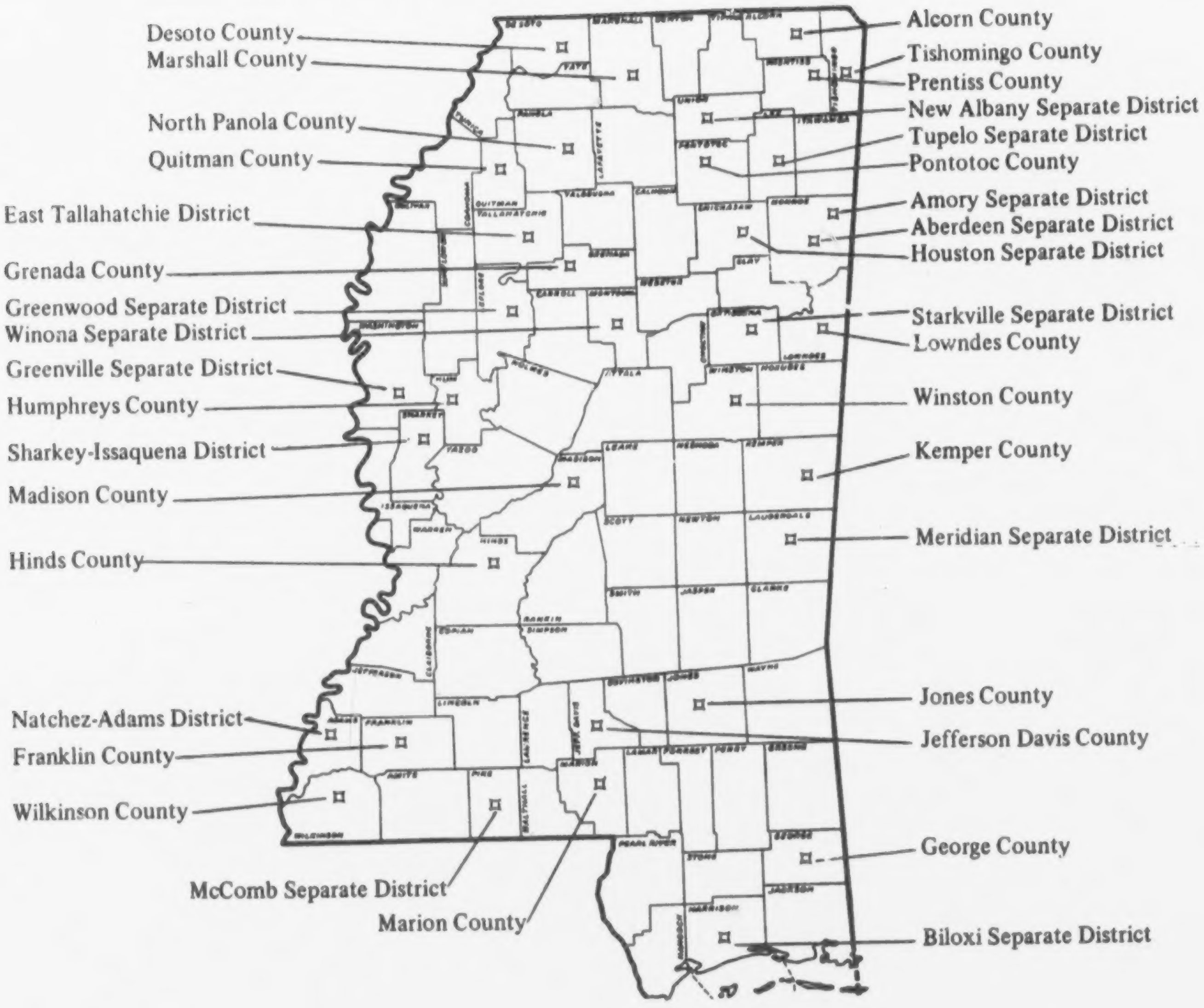
4. *What is the procedure for applying for admission to a college or vocational school?*

The procedure for gaining admission to a college or vocational school varies from one school to another. However, some similarity exists. In general, the following procedure can be followed:

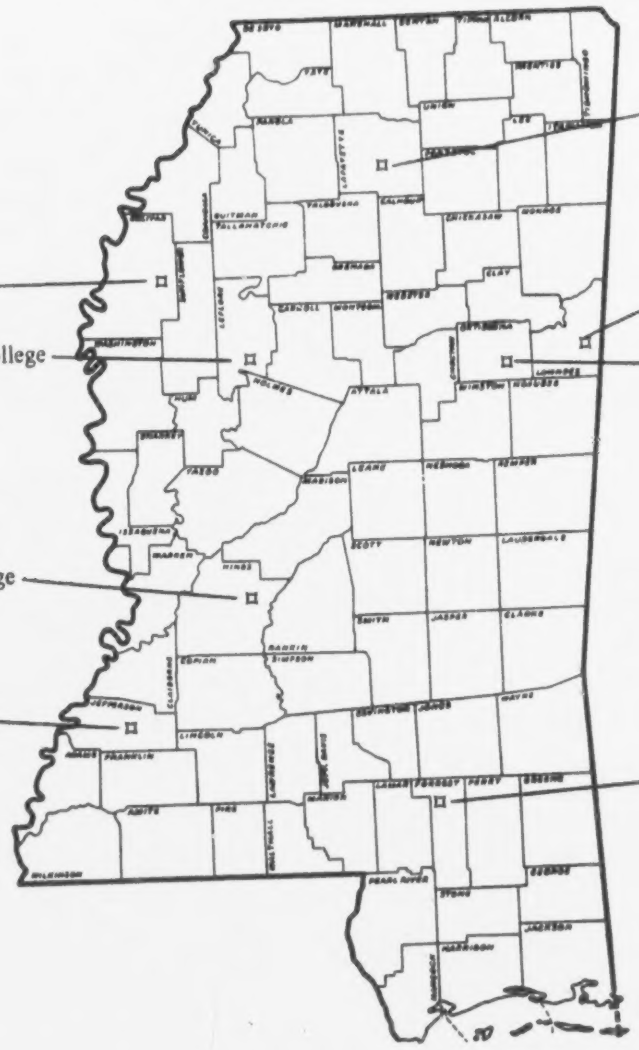
1. Write to the college or school and request an application blank and catalog.
   a. In the case of a college, the letter should be addressed to the registrar. The registrar of a college is the person in charge of keeping records. Sometimes the enrollment of new students may be supervised by a director of admissions, but if so, the registrar will forward your letter.
   b. Letters to a vocational school should be sent to the director of the school. Students desiring admission to the vocational department in a junior college that has both vocational and academic programs should write to the vocational department at the junior college.
2. Complete the appropriate application blank and return it to the proper address. The address is indicated on the application blank. Sample application blanks are located in the Appendix of this book.
3. Arrange to have a transcript of high school credits mailed to the college. The principal or counselor in your high school can assist with this.
4. Take the pre-admission tests which are required by the college. The catalog will provide information about the required tests. Most colleges require students to take the American College Test (ACT). Some colleges have cut-off scores. Students who make below the cut-off score are not admitted or may be admitted on probation. Have your test scores mailed to the college. Vocational schools usually do not require students to take the ACT.
5. Have a medical examination. (A sample medical examination record is located in Appendix C.)
6. Send the necessary deposit of fees (if required) to the proper office at the college. This deposit insures that space in the college will be available for you at the time of registration.

Principals, counselors, and teachers can assist students in making applications for admission to colleges and vocational schools. Several sources of assistance are also available on college campuses to help students complete application blanks. The division of student affairs can provide assistance with many kinds of problems, including financial aid.

SECONDARY VOCATIONAL SCHOOLS IN MISSISSIPPI


Desoto County
Marshall County
North Panola County
Quitman County
East Tallahatchie District
Grenada County
Greenwood Separate District
Winona Separate District
Greenville Separate District
Humphreys County
Sharkey-Issaquena District
Madison County
Hinds County
Natchez-Adams District
Franklin County
Wilkinson County
McComb Separate District
Marion County
Alcorn County
Tishomingo County
Prentiss County
New Albany Separate District
Tupelo Separate District
Pontotoc County
Amory Separate District
Aberdeen Separate District
Houston Separate District
Starkville Separate District
Lowndes County
Winston County
Kemper County
Meridian Separate District
Jones County
Jefferson Davis County
George County
Biloxi Separate District

PUBLIC COLLEGES AND UNIVERSITIES IN MISSISSIPPI



University of Mississippi
(Oxford)

Delta State College
(Cleveland)

Mississippi State College for Women
(Columbus)

Mississippi Valley State College
(Itta Bena)

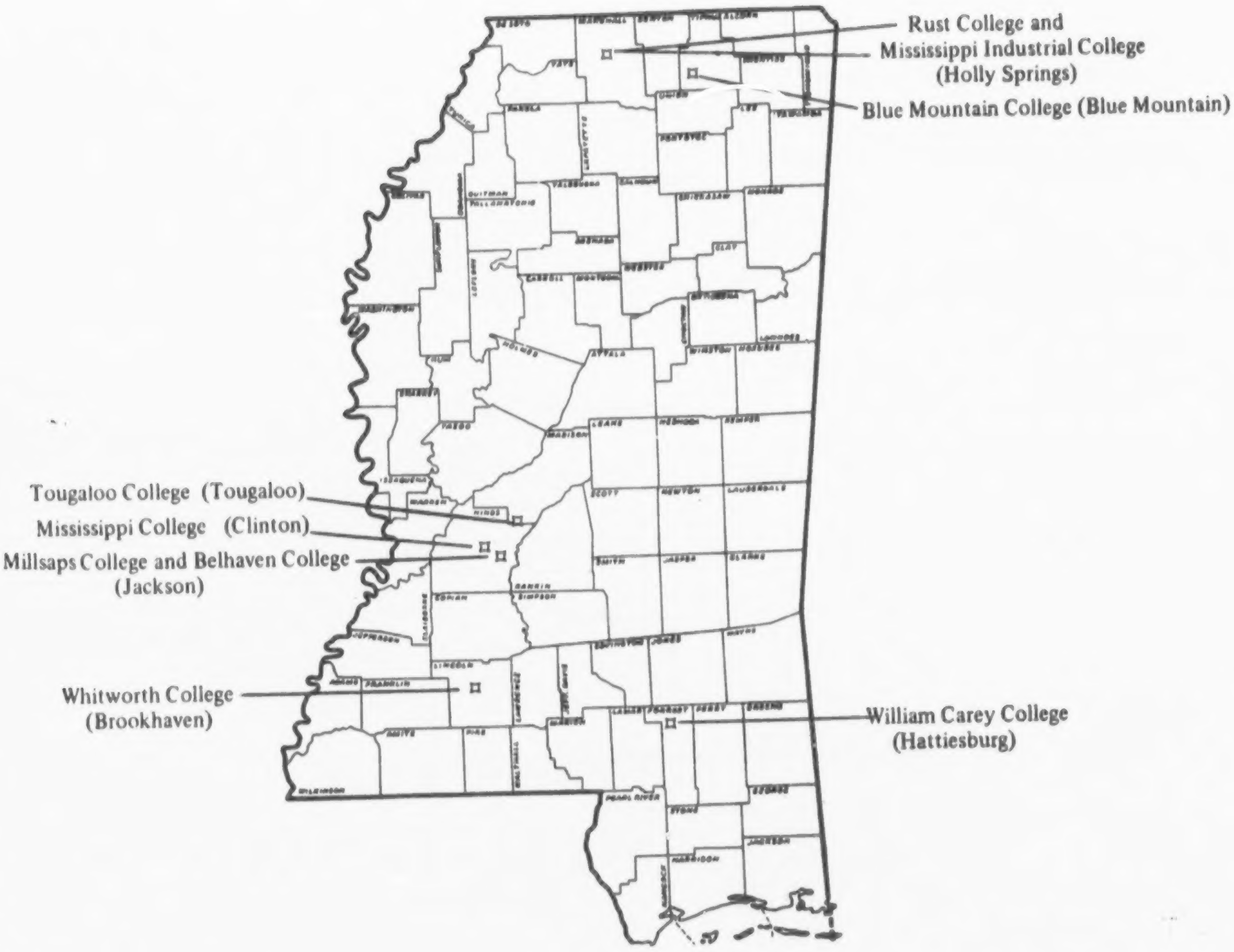
Mississippi State University
(Starkville)

Jackson State College
(Jackson)

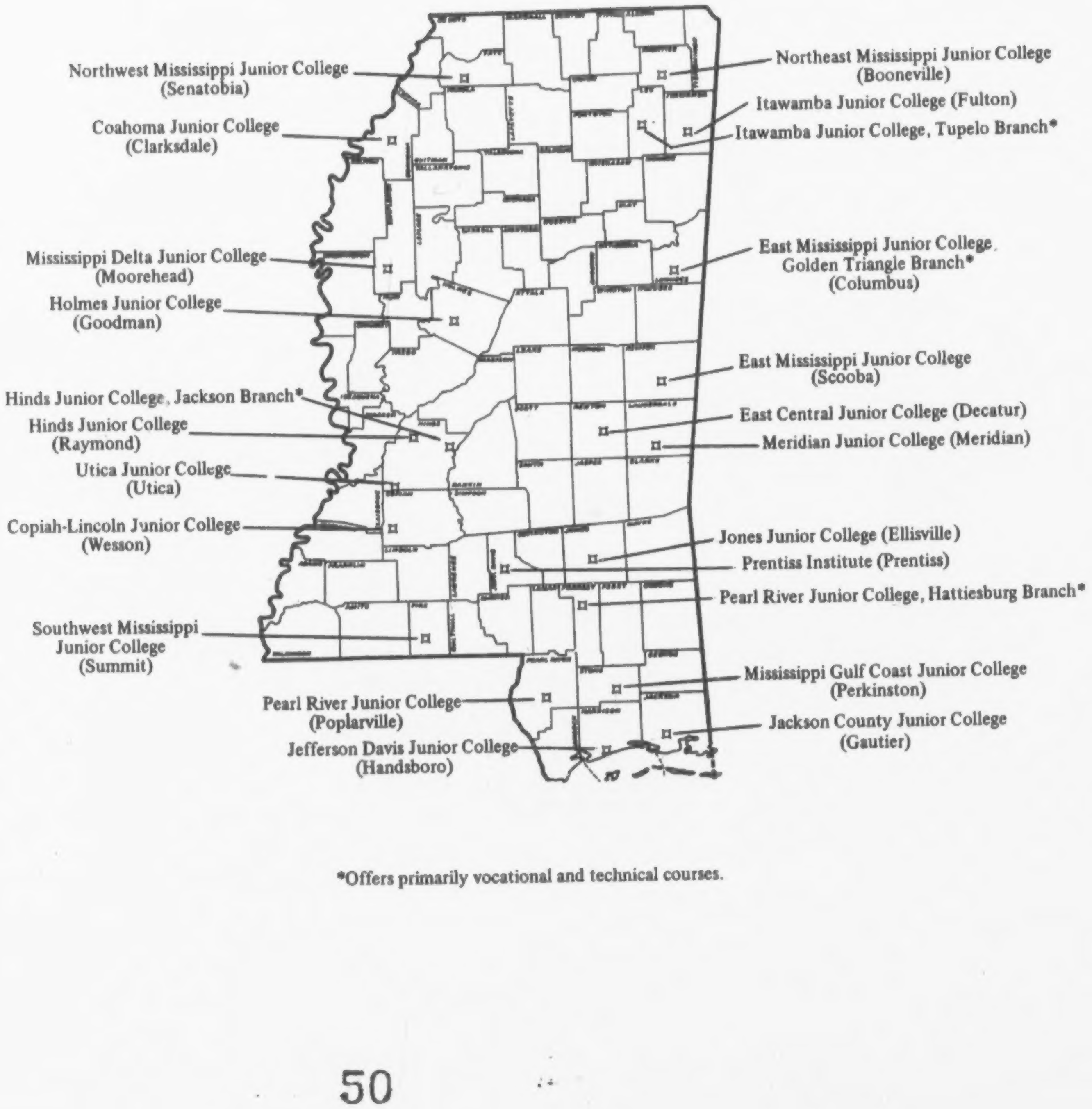
Alcorn Agricultural and
Mechanical College
(Lorman)

University of Southern Mississippi
(Hattiesburg)

PRIVATE COLLEGES IN MISSISSIPPI

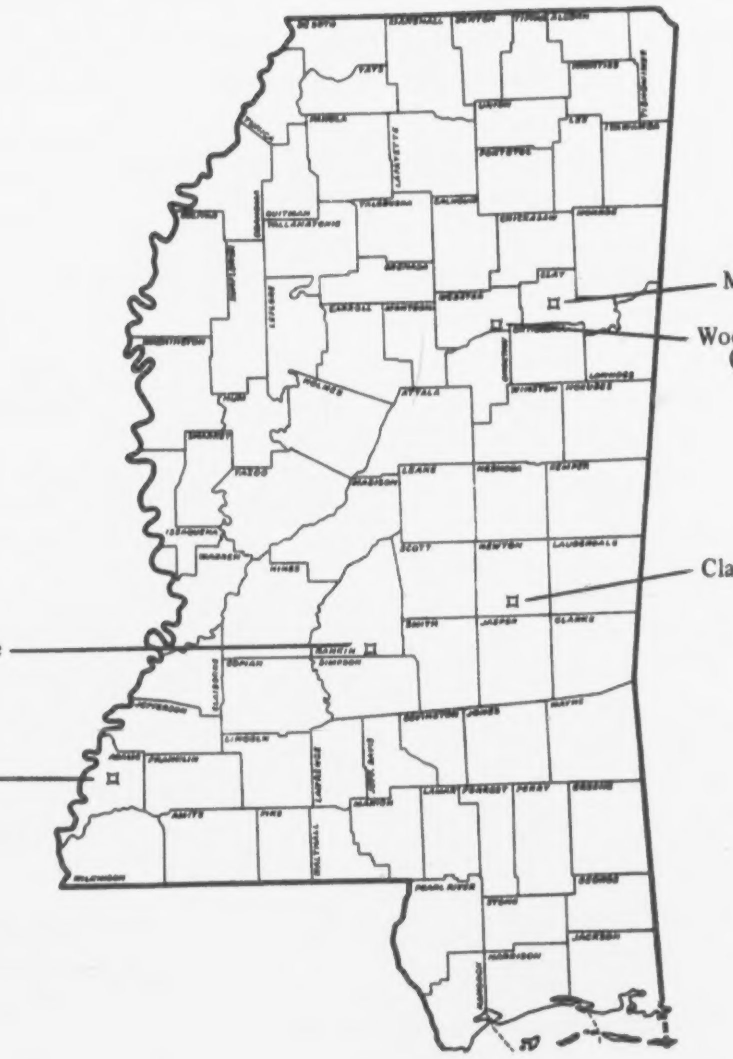

Rust College and
Mississippi Industrial College
(Holly Springs)
Blue Mountain College (Blue Mountain)
Tougaloo College (Tougaloo)
Mississippi College (Clinton)
Millsaps College and Belhaven College
(Jackson)
Whitworth College
(Brookhaven)
William Carey College
(Hattiesburg)

PUBLIC JUNIOR COLLEGES IN MISSISSIPPI


Northwest Mississippi Junior College
(Senatobia)
Coahoma Junior College
(Clarksdale)
Mississippi Delta Junior College
(Moorehead)
Holmes Junior College
(Goodman)
Hinds Junior College, Jackson Branch*
Hinds Junior College
(Raymond)
Utica Junior College
(Utica)
Copiah-Lincoln Junior College
(Wesson)
Southwest Mississippi
Junior College
(Summit)
Pearl River Junior College
(Poplarville)
Jefferson Davis Junior College
(Handsboro)
Northeast Mississippi Junior College
(Booneville)
Itawamba Junior College (Fulton)
Itawamba Junior College, Tupelo Branch*
East Mississippi Junior College,
Golden Triangle Branch*
(Columbus)
East Mississippi Junior College
(Scooba)
East Central Junior College (Decatur)
Meridian Junior College (Meridian)
Jones Junior College (Ellisville)
Prentiss Institute (Prentiss)
Pearl River Junior College, Hattiesburg Branch*
Mississippi Gulf Coast Junior College
(Perkinston)
Jackson County Junior College
(Gautier)

*Offers primarily vocational and technical courses.

PRIVATE JUNIOR COLLEGES IN MISSISSIPPI


Mary Holmes Junior College
(West Point)
Wood Junior College
(Mathiston)
Clarke Memorial Junior College
(Newton)
Piney Woods Junior College
(Piney Woods)
Natchez Junior College
(Natchez)

5. *How much will the education or training cost?*

The cost of education depends upon several factors. Perhaps the most important factor is the area to be studied. Certain areas of study require considerable time for completion. An example is medicine which requires years of study. Other areas may require only a few weeks or months of training. An example is cosmetology which requires several months.

The cost of education will vary with the school or college chosen. It is usually more economical to attend a public junior college. This is true for students studying in either vocational subjects or courses in academic areas which can be transferred to a senior college if desired. Private vocational schools usually charge more for the same training than public vocational schools. In turn, private junior colleges and senior colleges usually have higher fees than public colleges.

Some examples of the cost of various educational programs are shown below. These costs are for students who are going to school full time.

Colleges and Schools in Mississippi	**Approximate Cost for 9 months***
Public college	
Day student**	$ 450.00
Dormitory student***	1,000.00
Public university	
Day student	$ 500.00
Dormitory student	1,400.00
Public junior college	
Day student	$ 200.00
Dormitory student	600.00
Public junior college (Vocational Course)	
Day student	$ 200.00
Dormitory student	600.00
Private college	
Day student	$1,200.00
Dormitory student	2,000.00

* Does not include books, supplies, clothing, or other personal items.
** Day student is defined as a student who rooms off-campus. The cost for a day student does not include room or meals.
*** Dormitory student is defined as one who lives on campus. The costs for a dormitory student include room and meals.

6. *What sources of assistance are available for financing education and training?*

Securing the money required to pay for education and training is a problem for many students. Fortunately, this is a problem that can usually be overcome. Students must be willing to explore all possible sources of financial aid. Usually, a student who gives up easily will not secure the aid that he needs.

Education may be financed in several ways. The most common ways are gifts, scholarships, loans, and work.

Gifts. Parents or other persons may supply part or all of the money that is required. Students often feel that they should provide at least a part of the money themselves and not depend completely on their parents for support.

Scholarships. A scholarship is a grant or gift, usually given through a college, to help finance a student's education. Various donors furnish the money. Scholarships usually supply only a portion of the money required. The bases for awarding scholarships vary. Some are given for high school academic achievement (grades) and high test scores. Others are awarded on the basis of need. Information about scholarships at a college can be obtained from its director of financial aid.

Loans. Loans to finance education are available from a number of sources. Those obtained through colleges usually have lower interest rates. In some cases it may be necessary to repay only part of a loan. The director of financial aid at a college can furnish details about the availability of these loans.

Work. Students may finance part or all of their education by working. Colleges often have part-time jobs available. Many students work full-time in the summer. Some colleges have cooperative programs which allow students to work and go to school alternate semesters. Additional information about work at a college can be obtained from its director of financial aid.

Review Questions:

1. How does the amount of education required for different jobs vary?
2. What is the sequence of education in the United States?
3. What kinds of schools and colleges are found in Mississippi?
4. List the steps in being admitted to a college or vocational school.
5. What determines the cost of education?
6. How may students finance education?

Suggested Activities:

1. Obtain catalogs and brochures from several nearby colleges and vocational schools. Review the materials. Note the areas of study offered and the requirements in the various areas.

2. Contact representatives of nearby colleges and vocational schools. Invite them to visit the class and discuss the educational requirements in various fields. Also, have them explain how to be admitted, how much it costs for various areas of study, and how to obtain financial aid.

3. Obtain an application blank for admission to a college or vocational school. Study it to determine the kinds of information needed. (Seniors may wish to complete the blank and send it to the school they are interested in attending.)

4. Invite a former student of your school who is now enrolled in a college or vocational school to visit the class. Have this person discuss his experiences at the school.

5. Invite the counselor in your school to visit class. Have him explain how former students have financed their education in college or vocational school.

6. Invite a counselor or teacher to visit class. Have him explain the following terms: units, semester hours, quarter hours, and 1080 hours.

VI. Selecting A Career

Every young person hopes to enter the right career. You most likely also have the same wish. You probably have questions about how to select a career. You may be wondering about where to find reliable assistance, how attending school is related to career planning, or how occupations may be studied. This unit is designed to provide assistance with some of these problems.

The following questions will be answered in this unit:

1. **How do people enter careers?**
2. **What factors should be considered in selecting a career?**
3. **What sources of assistance are available to help in selecting a career?**
4. **How may the reliability of occupational information be determined?**
5. **What tests may be used? How may the results be used in selecting a career?**
6. **How is the world of work studied?**
7. **How are occupations clustered in this publication?**

1. How do people enter careers?

People enter careers in different ways. It is not likely that any two people would enter a career in exactly the same way. Two main factors are important in career determination: choice and chance.

Choice. Choice involves planning. It involves selecting to do those things which place one at an advantage in the world of work. Through choice, individuals select the courses to take in high school and the trade or area to follow afterward. By selecting certain educational or training programs, an individual is preparing himself to make certain choices about work. Likewise, when he chooses an area of study, his alternatives in the world of work are limited. For example, if one chooses to learn carpentry he may enter work as a carpenter, apprentice carpenter, or carpenter's helper. He cannot, however, enter as an automobile mechanic. The same holds true for those who attend a four-year college. If one majors in physics he will not be a medical doctor upon graduation.

DECISIONS!
DECISIONS!
DECISIONS!

Choices need to be intelligently made. The facts must be clearly understood before choosing. Without accurate facts persons may make improper choices. Without certain kinds of education or training one may never have the opportunity of making a choice. If a job is open but one does not have the qualities required to fill that job, then a person has no choice. He must look for some other job for which he has the required education or experience.

Many factors influence the choices a person makes. The choice of a career is related to the career choices of his parents and friends. The choice is limited by where the student wants to live, by education, and by experience.

Chance. No planning is involved with chance. It is often by chance that a job becomes available. If, through choice, one has acquired necessary skills, then he may possibly be hired. If one does not have the required skills it does little good to apply.

It is important that a person be prepared when, by chance, a job becomes available. Chance is important. But, if through choice one has prepared himself, he will be able to take advantage of opportunities when they become available.

2. What factors should be considered in selecting a career?

The selection of a career is a personal decision which each person must make for himself. Consideration should be given to a number of factors. Some of these are listed and discussed below.

Interests. The kinds of activities, or nature of the work, in a career should be examined to determine if they are similar to one's interests. If one is interested in mechanics, it seems that the career selected would in some way involve mechanics. If one prefers to be outside, an office job might not be desirable. Each person should attempt to answer for himself the question: "What are my interests?" Once a person is aware of his interests he should consider them in selecting a career.

Abilities. A worker needs to have the skill, talent, knowledge, or power to do a job. Persons who have artistic abilities would do well to consider careers in art. Persons who do not have these qualities would probably be more successful in other careers. Many abilities can be developed. The purpose of education and training is to develop one's abilities which are required for work.

Education and Training Required. When trying to decide on a career, one should consider education and training. Some careers require considerable formal education and training; others require very little. Frequently, the necessary training may be given on-the-job.

This Photograph Shows a New Worker Receiving On-the-Job Instruction. (Courtesy Milt Lawrence, Jackson, Mississippi.)

The following questions regarding education should be answered: Where can it be obtained? How much is required? Will sufficient money be available? Am I willing to stay in school long enough?

Earnings. A career should provide adequate income to obtain the desired level of living. Persons usually begin careers in low-paying occupations and advance to those which pay more. The advancements also bring additional responsibility. One must also recognize that he may not advance as rapidly as planned.

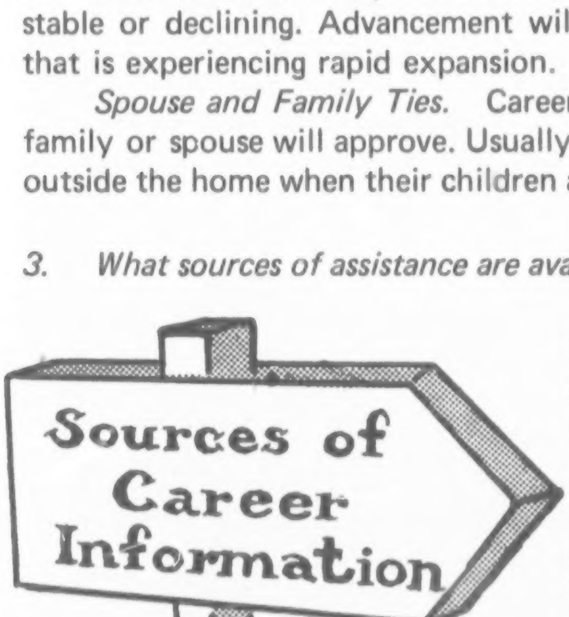
Location of the Work. Certain occupations may not be available in one's home town. In fact, opportunity in the world of work frequently demands that one leave his home town. One may have to move to a larger city or to another state. Some people do not mind moving. Others prefer to remain near their home towns. Each person must make his own decision with regard to family ties.

Methods of Entry. Different occupations are entered in different ways. Some require extensive education and training. Others require a period of apprenticeship. It is almost impossible to enter some occupations unless a parent or close relative has been in the occupations. Examples include certain skilled occupations around the larger cities and farming. Farming requires a large investment in land and equipment. It is almost impossible for a young person to acquire these unless they are inherited. Of course, one can begin as a worker on another farm and gradually obtain his own farm over the years. It may be necessary to take an examination or obtain a license to qualify for entry into some occupations. Union membership may affect the speed of finding employment or advancing in a job.

Future. Some occupational areas are rapidly expanding. Others are remaining relatively stable or declining. Advancement will usually come about faster in an occupational area that is experiencing rapid expansion.

Spouse and Family Ties. Careers may be somewhat limited by those of which the family or spouse will approve. Usually, women who are married temporarily give up a career outside the home when their children are young.

3. What sources of assistance are available to help in selecting a career?



Many sources of information are available to aid in selecting a career. These sources should be used as often as necessary. They are usually readily available to everyone, especially students. Some of the more common sources of assistance are listed below.

Counselors. Most schools have counselors. These persons usually have a library of information pertaining to careers. Counselors frequently administer tests to aid in determining aptitudes and interests for particular careers. Counselors frequently administer tests to aid in determining aptitudes and interests for particular careers.

Teachers. Teachers, especially vocational teachers, often have career information. They can use their varied experiences and backgrounds to furnish accurate and realistic information. If teachers do not have the information needed, they usually know how and where to obtain it.

Business and Professional Workers. Local businessmen can furnish first-hand information concerning their respective careers. They are usually glad to meet with groups or individuals to discuss their careers and the opportunities available. A worker in any job can usually provide some insight into the nature of the work he is doing.

Employment Services. Employment services have information concerning the kinds of jobs available, number of people employed, expected change in number of jobs, and related details. They usually have a counselor available to explain the various aspects of the services provided. These services are provided to individuals free of charge, except for private employment agencies.

News Media. The various news media play important roles in providing career information. This information is normally reliable, but should be carefully evaluated for accuracy. The news media include newspapers, magazines, radio, and television. They are an up-to-date source of information concerning employment trends in a local area.

Parents. Youth are probably more familiar with the occupations of their parents than of any other occupation. Some parents want their children to follow them in the same or similar careers. Other parents encourage their children to seek different careers. The influence of parents is very strong on the career plans of children.

Specialized Occupational Materials. A wide assortment of up-to-date, career-information materials is available. These materials include pamphlets, kits, films, tape recordings, and similar materials. Libraries and counselors usually have some of these available.

4. How may the reliability of occupational information be determined?

When studying information about careers one wants to be sure that the information is reliable. When unreliable information is used, one may select a career on the basis of incomplete or inaccurate information. If this is done, one may be disappointed in his career after a decision has been made.

Some things to look for in determining the reliability of career information are:

Date—Certain material that was published more than three years ago may be inaccurate. Changes occur very fast in the world of work. The most recent information about occupations should always be used.

Purpose of the material—Career information materials are available from many different sources. Some of these materials are completely accurate. Other materials may be designed to recruit persons into a particular occupation. The facts are presented so as to paint a bright future in that particular occupation. These are biased materials and should be carefully evaluated.

Accuracy—Sometimes materials are inaccurate. This may be accidental or simply the result of whoever prepared the material having erroneous information. Occupational materials are always prepared in terms of how the author views them.

Glamorization—Occupational information materials may tend to present only the advantages of an occupation. All occupations have good features and bad features. Information about occupations should present both sides of the story.

5. What tests may be used? How may the results be used in selecting a career?

Several different tests may be used to help a person select a career. Most all schools have a testing program which includes such tests. The scores obtained from tests provide information to counselors and also assist persons in understanding themselves.

Tests are usually designed for specific purposes. Different tests will attempt to determine various traits of people. Schools often give interest, aptitude, and achievement tests. Interest tests are designed to aid students in understanding their interests. Aptitude tests are to assist in determining the potential or ability of a person in certain areas. Achievement tests attempt to determine how much a student has learned in relation to other students.

Many of the tests that schools give are not really "tests." They are "rating scales" or "inventories." There are no right or wrong answers on rating scales. They are designed to determine a person's opinion about certain things. In taking such tests, students should be honest and indicate how they truly feel.

Several different interest tests are available. All of these attempt to indicate the interests of people in certain areas. The areas commonly included relate to mechanical, outdoor, academic, business, and artistic interests.

Aptitude tests have areas similar to interest tests. They attempt to determine a person's potential for something rather than just his interest in it. For example, an aptitude test may be designed to determine a person's aptitude for doing routine activities or for doing mechanical activities.

Test results may be helpful to students in selecting careers. It should be remembered that tests do not reveal everything. The scores that students make are indications of interests, aptitudes, and the like. They do not tell the complete story.

The helpfulness of tests is determined by the kind of test used and whether or not it is administered, scored, and interpreted properly. Students should secure the assistance of counselors in interpreting test results. Actually, the counselors in most schools have the test results on file in their offices. In this case, students see their scores only in the presence of a counselor.

Results of tests usually show a person's suitability for a broad career field and not for a particular occupation. Tests may indicate that a person is better suited for a certain cluster or group of careers. The person will then be able to narrow his choices.

6. How is the world of work studied?

A number of different ways may be used to learn about work. Some people prefer to use just one of the ways; others prefer a combination. It is probably more meaningful to use a combination.

A person who is beginning a study of occupations should study them in groups or clusters. The many thousands of occupations in the world of work make it impossible to study each individually. By studying groups of similar occupations, one can select the specific occupations out of each group that he likes best and explore each in detail.

Studying occupations could involve just reading pamphlets or books. This is good, but more is needed. Various ways of making one's study realistic should be used. Films, tape recordings, and resource persons are meaningful and provide assistance in understanding the nature of an occupation. A variety of laboratory activities can be valuable in answering the question, "What is an occupation really like?" Part-time work in the summer or after school is excellent. Making field trips to businesses and industries is also helpful. No doubt a combination of ways of studying occupations is used in occupational orientation classes.

7. How are occupations clustered in this publication?

All occupations are placed in eight major groups in this publication. Each group, or category, is further divided into six levels. This method of classifying occupations was developed by Anne Roe of New York University. It is known as the "Roe Classification System."

The eight major groups are known as "Interest Groups." Occupations are placed in the respective groups on the basis of the primary interest of persons engaged in these occupations. The eight groups are:

I. **Service**

Occupations in the Service Group are concerned with helping other people. Workers in Service occupations serve and attend to the personal tastes, needs, and welfare of other persons.

II. **Business Contact**

This interest Group includes those occupations in which face-to-face contact is made with other people. (Sales occupations in which selling is routine and no personal persuasion is involved are in the Organization Group.)

III. **Organization**

This group includes the managerial and white collar jobs found in business, industry, and government. Organization occupations are concerned with the efficient functioning of activities within these agencies.

IV. **Technology**

Occupations concerned with the production, maintenance, and transportation of commodities and utilities are included here. Many of the skilled trades and construction jobs are in the Technology Group.

V. **Outdoor**

As is indicated by the name, this Group is concerned with "outdoors" kinds of activities. Occupations in this Group deal with crop production, management of water resources (both marine and inland), mineral resources, forest production, natural resources, and animal husbandry.

VI. **Science**

Occupations in this Group are primarily concerned with scientific theory and its application. These occupations are distinguished from those in the Technology Group by the setting in which the work is performed.

VII. **General Cultural**

Occupations primarily concerned with the preservation and transmission of our general cultural heritage are in this Group. It includes occupations in education, journalism, law, and related areas.

VIII. Arts and Entertainment

These occupations include those which are primarily concerned with the use of special skills in the creative arts and in the field of entertainment. Creators and performers are included.

Examples of occupations in each category are shown in the chart below.

An Example of how Occupations are Grouped in the Roe Classification System*

	I Service	II Business Contact	III Organization	IV Technology	V Outdoor	VI Science	VII General Cultural	VIII Art And Entertainment
1	Counselor	Promoter	Industrial Tycoon Economist	Chief Engineer	Archaeologist Geologist	Research Scientist Medical Specialist	Supreme Court Justice College Professor	Artist Architect
2	Social Worker Probation Officer	Public Relations Specialist Manufacturer's Salesman	Certified Public Accountant Hotel Manager	Factory Manager Computer Programmer	Forester Surveyor	Nurse Veterinarian	Editor High School Teacher	Athlete Designer
3	Detective Welfare Worker	Automobile Salesman Insurance Salesman	Bank Teller Restaurant Manager	Pilot Radio Operator	Farm Owner Game Warden	X-Ray Technician Chiropractor	Radio Announcer Reporter	Ad Writer Interior Decorator
4	Barber Policeman	Auctioneer	Cashier Receptionist	Electrician Mechanic	Miner Oilwell Driller	Technical Assistant Practical Nurse	Law Clerk	Photographer Racing Car Driver
5	Taxi Driver Waiter	Peddler Routeman	Typist Mail Carrier	Bulldozer Operator Truck Driver	Farm Tenant Painter			Stage Hand
6	Elevator Operator Watchman		Messengerboy	Laborer Meter Reader	Farm Laborer			

*Anne Roe. The Psychology of Occupations, New York. John Wiley and Sons, Inc., 1956.

Each Group in the Roe system is divided into six levels. The levels are based on responsibility, capacity, and skill of the occupations. The major distinction between levels is found in the degree of responsibility for decisions. Persons in some occupations are required to make numerous decisions. Other occupations require considerable education and experience. A description of each level follows.

Level 1. Professional and Managerial: Independent Responsibility.

This level includes the innovators and creators, the top managerial and administrative people, and the professional persons who have independent responsibility in important respects. They are policy makers. If a high level of education is required it is at the doctoral level or equivalent. All level 1 occupations do not require a high level of education, however. Examples in this level not requiring high levels of education are high government officials and persons in the creative arts.

Level 2. Professional and Managerial.

The distinction between this level and level 1 is primarily one of degree. Occupations in this level are narrower or have less significant responsibilities than in level 1. These occupations involve policy interpretation, medium degree of responsibility, and education at or above the bachelor's degree level.

Level 3. Semi-Professional and Small Business.

These occupations have a low degree of responsibility for others and involve a technical-level education.

Level 4. Skilled.

This level and those following are common subdivisions of occupations. Skilled occupations require apprenticeship or other special training or experience.

Level 5. Semi-Skilled.

These occupations require some training and experience but markedly less than the occupations in the Skilled Level. In addition, there is much less independence and initiative permitted in these occupations.

Level 6. Unskilled.

These occupations require no special training or education and not much more ability than is needed to follow simple directions and to engage in simple activities. At this level, differentiation in the interest groups depends primarily upon the setting for the work.

Some occupations appear in more than one level. This is because the amount of education and/or experience acquired by those who are engaged in such occupations varies. Those at the higher level assume more responsibility and may be supervising or directing activities of others in the same occupation.

Review Questions:

1. List and discuss some factors to consider in selecting a career.
2. What are some sources of information about work?
3. What are some things to look for in determining the reliability of occupational information?
4. How are the results of tests used in selecting a career?
5. Who is Anne Roe? How did she group occupations?

Suggested Activities:

1. Informally interview several people. Ask them how they began their careers.

2. List the occupations of your parents and several other adults whom you know. Indicate how much education is required for each occupation. Use the education levels of high school, junior college, or college.

3. Make a list of sources of career information in your school. Visit each source. Determine the kinds of materials that are available.

4. Invite the counselor in your school to visit class and explain the testing program.

5. Visit with the counselor in your school. Determine the kinds of tests given, when they are given, and the purpose of each.

6. Obtain a copy of the scores that you made on an occupational interest test. Compare your scores with the areas of work in which you think you are interested.

VII. Exploring Service Occupations

Do you like to do things for other people? If so, you may find some occupations in the Service Group which are similar to your interests. These occupations are people-oriented. They always involve one person doing something for or to another person. Service occupations are concerned with attending to the personal tastes, needs, and welfare of other people.

The following questions about Service occupations will be discussed:

1. **What occupations are in the Service Group?**
2. **What is the nature of the work in Service occupations?**
3. **How important are Service occupations?**
4. **What education or training is desirable for success in Service occupations?**
5. **Where is employment in Service occupations found?**

1. What occupations are in the Service Group?

Examples of occupations in the Service Group are listed below. The examples are listed by level. A brief description of each is also given. It is suggested that other references be consulted for more detailed information.

Level 1

Psychologist—studies the behavior of individuals and groups, seeks to understand people and to explain their actions.

Social work supervisor—supervises persons performing social service functions. Persons doing this kind of work are social workers. Their work is normally with welfare agencies or similar organizations.

Level 2

Caseworker—identifies the social problems of individuals and families through interviews; aids them in understanding their problems and in securing necessary services.

Child welfare worker—improves the physical and emotional well-being of deprived and troubled children and youth.

Counselor, rehabilitation—helps handicapped persons make a satisfactory occupational adjustment.

Counselor, school—helps with the personal and social adjustment of students and aids in the prevention or correction of problems that may interfere with their success; advises in educational and vocational decisions.

Counselor, vocational—helps people develop and accept an adequate career goal which will use the individual's potential and bring personal satisfaction.

FBI agent—investigates many types of violations of federal laws such as bank robberies, sabotage, or kidnapping.

Governess—cares for children in private homes; teaches language and personal traits; oversees their recreation, diet, and health; and handles social and disciplinary problems.

Parole officer—concerned with activities related to the conditional release of juveniles or adults from correctional institutions.

Placement officer—provides various job placement services for students and former students. Vocational schools and colleges may have placement officers.

Social worker, community—helps plan and develop health, housing, welfare, and recreational services for a neighborhood or community.

Social worker, group—helps people, through group activities, learn to understand themselves and others better, and to work with others to achieve a common goal.

Social worker, school—helps children who have unsatisfactory behavior. The behavior problems may be related to social problems.

Speech pathologist—studies speech and language problems; diagnostic and counseling services may be provided to persons with these problems.

Therapist, occupational—plans, organizes, and directs activities to aid handicapped persons in developing skills related to the world of work.

Therapist, physical—treats disabled or handicapped persons. Instruction is given to aid in overcoming handicaps so the afflicted person may assume a relatively normal role in society.

Level 3

Butler—supervises and coordinates the work of household employees. Performs many services such as supervising the preparation and serving of food, delivering messages, and receiving guests.

Fire captain—supervises the work of firefighters.

Housekeeper, home—manages a house, such as a governor's mansion, where there is a large staff of other household employees.

Police chief—directs the activities of policemen.

Recreation worker—helps people enjoy and use their leisure time constructively by organizing individual and group activities and by administering physical, social, and cultural programs for all age groups at camps, playgrounds, and community centers.

Level 4

Barber—cuts hair in accordance with the preference of each customer; also provides services related to care of hair, scalp, and face.

Beautician—provides a variety of beauty services, most of which are related to the care of hair. A beautician may cut, style, color, and set hair; give scalp treatments, apply eyelash and eyebrow color; remove facial hair; give manicures or pedicures; and give facials and work with other cosmetics.

Chef—supervises the activities of cooks and other kitchen personnel in restaurants and cafeterias. A chef may also plan menus and develop new recipes.

Lifeguard—promotes safety by observing activities in swimming areas and providing aid, if needed.

Policeman—helps to preserve law and order by preventing criminal activities, investigating crimes, and by apprehending and assisting in the prosecution of offenders.

Policewoman—works with women and youth in such activities as locating lost children, and searching, questioning, booking, and fingerprinting women prisoners.

Practical nurse—works under the direction of physicians and professional nurses and assists in caring for medical and surgical patients, convalescents, handicapped people, and others who are physically or mentally ill. Such a person must undergo a period of training and be licensed. Frequently known as "licensed practical nurse" (LPN).

Steward, airline—man who helps to make air flights safe, comfortable, and enjoyable.

Stewardess, airline—woman who helps to make air flights safe, comfortable, and enjoyable.

Level 5

Bellhop—carries the baggage for incoming hotel guests, escorts them to rooms, and sees that everything in the room is in order.

Cook, restaurant—prepares, seasons, and cooks soups, meats, vegetables, desserts, and other foodstuff.

Firefighter—participates in many different kinds of firefighting activities, helps people to safety, administers first aid, and helps in preventing fires.

Housekeeper—supervises work activities of cleaning personnel to insure clean, orderly, and attractive rooms in motels, hospitals, and similar establishments.

Service station attendant—greets customers, inquires about their needs, and performs a variety of services for the customers, ranging from pumping gas to giving street directions.

Taxi driver—provides passenger transportation within a community; assists passengers in and out of the cab, and handles baggage.

Waiter—man who works in restaurants taking customers' orders, serving food and beverages, and making out customers' checks.

Waitress—woman who works in restaurants taking customers' orders, serving food and beverages, and making out customers' checks.

Level 6

Busboy or busgirl—assists with serving food; may also set tables, remove dirty dishes, and perform various cleaning activities.

Cook's helper—prepares vegetables and meats and does other work for cook.

Nurse aide—works under the direction and supervision of registered professional nurses and licensed practical nurses, and performs such services as answering call bells, serving meals, making beds, and bathing or dressing patients.

Orderly—man who performs the same duties as nurse aide.

Nursemaid—attends to young children in private homes. Such a person is commonly known as a babysitter.

2. *What is the nature of the work in Service occupations?*

The nature of the work in Service occupations varies considerably from one occupation to another. However, these occupations also have some similarities.

Service occupations involve doing things for other people. There is wide variation in the kinds of things done. Some are concerned with the mental and physical welfare of people. These require considerable education and patience. Work in certain of these occupations involves helping people overcome handicaps. Social workers and counselors assist with numerous problems, including helping disadvantaged persons.

The work of police officers and firemen is concerned with protecting and maintaining property and persons. An element of danger is involved in the performance of duties. Sometimes these persons must work long hours and must work outside in bad weather.

Catering to the whims and tastes of people is a major part of the duties of some Service workers. Airline stewardesses care for the safety of passengers and attempt to make them comfortable. Such workers may be away from home quite often. An attractive fringe benefit is special personal travel rates. Some of the work of stewardesses is similar to that of waiters and waitresses. Waiters are responsible for a wide range of work. Quite often, they must carry trays of food, drinks, dishes, or utensils. They must be able to take orders and figure bills accurately. They may be assisted by busboys.

Service work involves activity. People in these occupations must usually be physically active. Courtesy and politeness are vital. Neat clothing and appearance are necessary in all work in which public contact is involved. Some Service occupations require uniforms or other special clothing.

3. *How important are Service occupations?*

By reviewing a list of occupations in this Group, it is obvious that Service occupations are important. The number of workers in some of these occupations is shown below.

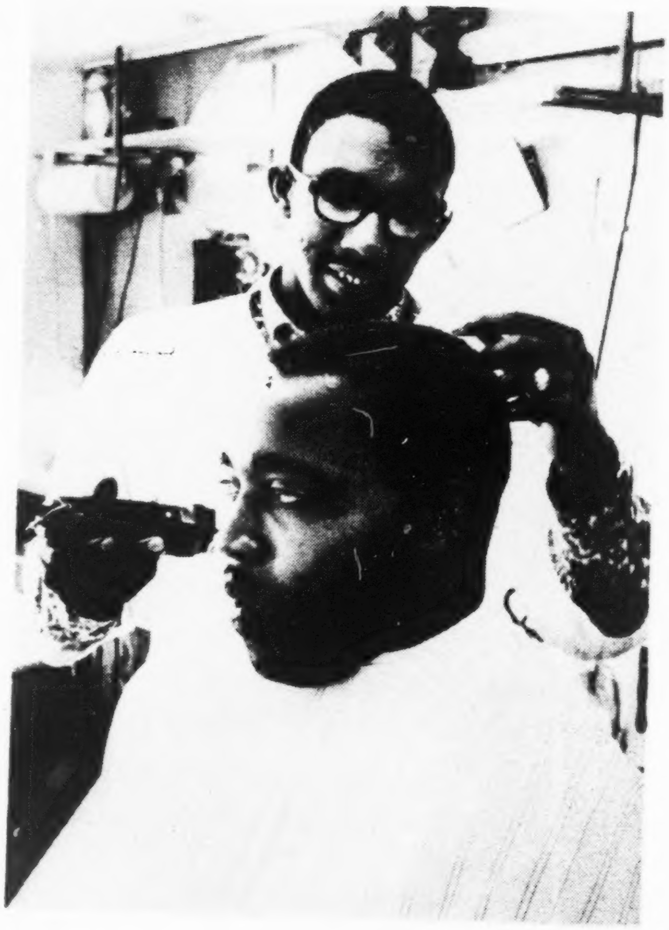
Occupation	*Approximate Number of Workers in the Occupation*
Psychologist	32,000
Counselor	75,000
Social Worker	160,000
Therapist	21,000
Firefighter	180,000
Police Officer	320,000
Stewardess, airline (and steward)	30,000
Waitress (and waiter)	960,000
Practical Nurse	320,000

4. *What education or training is desirable for success in Service occupations?*

Considerable variation in the amount of education required exists among Service occupations. Persons who have the most education are likely to find work at higher levels. It should be noted that education alone does not mean that one will be successful in his work. Motivation and hard work are also important factors.

Within occupations persons with different amounts of education are found. Those persons with more are apt to be supervisors and to be responsible for making some decisions. The amount of pay may also be related to education. Of course, seniority and experience are used in establishing the rank of workers.

The amount of education and training required for a few of the occupations in the Service Group is listed below.



A Barber at Work. (Courtesy E.I. du Pont de Nemours and Company, Inc., Wilmington, Delaware.)

Occupation	*General Minimum Educational Requirements*
Psychologist	Master's degree with a major in psychology.
Counselor	Bachelor's degree, preferably with a major in a social science, plus 15 semester hours in counseling and related courses. School counselors may be required to have a teaching certificate.
Social worker	Bachelor's degree, preferably in social welfare. Specialized work may require at least a Master's degree.
Therapist	Degree or certificate in occupational therapy.
Firefighter	Be able to pass intelligence and physical examinations. Training is usually given after entry. Some take vocational training in firemanship.

Police officer	Considerable variation. High School is desirable. Training is usually given after entry. Specialists may need college education.
Stewardess, airline (and steward)	High school education, persons with some college are preferred. Training of about five weeks duration is given after job entry.
Waitress (and waiter)	No real educational requirements. Preference is given to those with some high school education, especially if it includes home economics.
Practical Nurse	Course of instruction in practical nursing in addition to at least two years of high school.

Personal traits often determine success in an occupation. People who have the personal traits listed below may enjoy, and be successful in, Service occupations:

1. Prefers to work with the problems and needs of others, rather than in an industrial or office environment.
2. Is willing to and capable of engaging in professional preparation (this would not be essential for some Service occupations)
3. Has good verbal aptitude
4. Has pleasing manner and appearance
5. Is dependable
6. Has the ability to perform under specific instructions
7. Has self control and ability to perform adequately under stress (stability)
8. Has the ability to understand and comply with requests of people
9. Is patient and courteous when dealing with people
10. Has pleasing personality
11. Has the ability to put people at ease
12. Has the ability to relate to people at all levels
13. Is quick-thinking and able to adapt to varied situations and responses
14. Is patient and sympathetic toward problems of others
15. Is attentive (with ability to pay attention to detail)
16. Has clean personal habits
17. Has the ability to achieve and maintain empathy and rapport with people
18. Has sympathetic attitude toward the welfare of others.
19. Has tact and poise

These traits do not apply to all Service occupations. Some occupations may require other traits. However, the ones listed above occur most often.

5. Where is employment in Service occupations found?

Employment in Service occupations is found almost everywhere. Opportunities in some of the occupations are greater in areas with concentrations of people. Since Service occupations are concerned with attending to the needs and whims of people, it is only natural that more of them would be found in cities. However, smaller cities and towns also have some opportunities.

Review Questions:

1. What is a "Service occupation?"
2. Which of the Service occupations are most important? Why?
3. How wide is the range in the amount of education and training required?

Suggested Activities:

1. List examples of times when you have done something for or to someone that would be considered part of a Service occupation. In preparing the list, consider the definition of the Service Group.

2. Review various occupational information materials. Carefully note all occupations which are in the Service Group. List occupations other than those given in this publication which you believe are in the Service Group.

3. Invite someone who is employed in a Service occupation to visit your class and discuss the nature of his work.

4. Develop a display, bulletin board, or poster depicting occupations in the Service Group. Clip pictures from magazines or newspapers which show workers in Service occupations.

5. Review the want ads of a newspaper. Cut out those in the Service Group and place them on a poster or bulletin board. Note where the jobs are found, the rate of pay, and the requirements for entry.

6. Review the yellow pages of the local telephone directory. Make a list of all businesses which might have Service occupations.

7. Select one or more occupations in the Service Group in which you are interested. Determine the following information for each occupation: (Your teacher may have prepared some forms for your use.)

OCCUPATIONAL STUDY OUTLINE

A. *Name of Occupation:*

B. *Duties of the Occupation:*

C. *Qualifications:* What are the personal requirements?

D. *Age:* How old must I be to enter the occupation?

E. *Sex:* Is this an occupation in which others of my sex are normally employed?

F. *Specific Physical and Health Requirements:* Am I the correct height to do the work? Are my eyesight and hearing adequate? Am I strong enough?

G. *Interest:* Do I possess this interest? If not, could I develop interest in this type of work?

H. *Abilities:* Do I possess the required abilities? If not, could I acquire the knowledge and skills necessary to do the job?

I. *Personality:* Do I possess the personal qualities necessary for doing this type of work? If not, could I develop these qualities?

J. *Values and Attitudes:* Does anything about this job violate values and attitudes I have about people and work? If so, could I adjust to situations that required that I change my values and attitudes?

K. *Preparation:* What subjects do I need to study? What special training will I need? How long will it take to receive this training? How much will it cost? Can I get this training within the state? Is work experience required for entry into this occupation? What is the method of entry into this occupation?

L. *Working Conditions on the Job:* Is it hazardous work? Is it noisy or dirty? Will I be working in shifts? Will I work indoors or outdoors? Is it hard work? Does the work require being away from home for long periods of time?

M. *Rewards from Work:* How much is the beginning pay? Is there chance for advancement? Will this work experience help me get a better job? Would I be happy doing this type of work?

N. *Employment Outlook:* How many are employed in the occupation at present? Are there employment opportunities in my community or state for this type of work?

O. *Special Requirements (such as certification, licenses, and examinations):*

8. Select one or more of the following activities which pertain to law enforcement occupations:
   a. Arrange to view the following films (for policeman, policewoman, FBI agent):
      Thin Blue Line (policeman)
      The Law Enforcement Officer

      Source: Modern Talking Pictures Service
      214 S. Cleveland St.
      Memphis, TN 38104
   b. Get permission to accompany a law enforcement officer on patrol. Through observation and questioning, find out what role the officer plays in the following services:
      (1) Investigating, identifying, and reporting
      (2) Traffic problems
      (3) Patrol
      (4) Obtaining evidence
      (5) Testifying

      Find out what materials and equipment are essential to his job. This would include report forms, weapons, penal codes, city maps, first aid kits, and weather and night protection equipment.

9. Visit a local fire department and observe and/or ask questions to obtain the following information.
   a. What happens when the alarm sounds?
   b. How is the run to the fire made?
   c. What size-up system or plan is used at the fire?
   d. What rescue procedures are followed?
   e. What methods of fire prevention are used?
   f. What is the procedure for extinguishing fires?
   g. Salvage—what is it and how is it accomplished?
   h. Examine the firefighting and rescue equipment, including fire pumps, fire extinguishers, hose, foam generators, nozzles, and ladders.

   Spend enough time at the fire station to see the activity that occurs after one or more fire alarms sound; observe the activity of all concerned. Ask to try your hand at coupling a hose, loading and unloading a hose, and stretching an advancing hose. Ask for a demonstration of the use of ropes in firefighting. Ask for permission to put on the protective clothing the firefighter must wear. You may also ask them to demonstrate the procedure for raising ladders, and using the ladders safely.

10. Arrange to go to the scene of a fire to observe activities of the firefighters. Caution: Stay a safe distance away from the fire and out of the way of firefighters.

    Do the following rescue and first aid activities in the classroom:
    a. Fireman's carry.
       (1) Get someone in the classroom to lie on the floor and pretend to be unconscious
       (2) Pass your hands under the armpits of the unconscious person
       (3) Lift to your knee
       (4) Rise to standing position
       (5) Place on shoulder
       (6) Stand up with person on shoulder

       Note: Persons not physically capable of doing this exercise should not participate.
    b. Care of victims after rescue. Obtain a first aid book from the local Red Cross chapter and use the procedures suggested for treating burns and for administering artificial respiration.

       Borrow a firefighter's manual to review. Obtain this and other reading materials from the local fire department. Also, fire prevention materials may be acquired by contacting almost any insurance agent.

11. Perform one or more of the following activities related to the occupations of social workers:
    a. View the following films:

       Horizons Unlimited. Source: Modern Talking Picture Service
       214 S. Cleveland St.
       Memphis, Tennessee 38101

       Come Quick. Source: Association Films, Inc.
       2221 Faulkner Road, N.E.
       Atlanta, Georgia 30324

       The Return. Source: Vocational Rehabilitation Administration
       Department of Health, Education, and Welfare
       Washington, D.C. 20201
    b. Identify a needy family through a local church or the welfare department. You will need the following information:
       (1) Number of people in the family (living at home)
       (2) Ages of members of the family
       (3) Number of children; age, and sex of each
       (4) Parents' occupations

        (5) Amount of income of family
        (6) Number of children in school
        (7) Where family lives

    c. Participate in one or more of the following activities:
        (1) Visit and talk with members of the needy family. Become friends with them. Observe the home environment.
        (2) Arrange a box of canned food and carry it to these people. Observe their reactions.
        (3) Collect good clothing no longer needed from friends and relatives. Attempt to get clothes that will fit family members. Take these to the family. Take time to establish a friendly relationship. Show a sincere desire to help them in any way you can.

    (Should you discover a family in dire need of assistance and not getting any assistance from welfare or any other source, talk with those who work with the welfare department, or rehabilitation center, or with a church pastor, or anyone whom you feel could help.)

    d. Read the following book:
    Careers in Social Service by Kathlyn Gay (1969). If not available in the library, it may be ordered from Julian Messner, 1 West 39th St., New York, N.Y. 10018.

12. Conduct one or more of the following activities related to the occupations of an Occupational Therapist and a Physical Therapist:

    a. Arrange to visit a hospital or other institution that employs someone in planning and directing therapeutic programs. Ask to observe the activities of those who are giving therapeutic treatment.

    b. Interview a psychologist who may be employed in one of the following places: schools, hospitals, public health agencies, research laboratories, or business. Ask about the type of work that he is doing (clinical, research, etc.).

14. Counselors.
Much of the work of the counselor in your school should be obvious to you through regular personal contact. Discuss this occupation with the occupational orientation teacher or the counselor. Inquire about employment opportunities, personal and educational requirements, and what preparation is immediately necessary to become a counselor.

15. Conduct some of the following activities related to the work of housekeepers, butlers, and maids:

    a. Plan to do several of the following activities:
        (1) Mend a pair of torn trousers.
        (2) Wash and iron clothes.
        (3) Prepare a meal for two adults and three children.
        (4) Wax and polish floors and furniture.
        (5) Answer the phone for a resident owner.

    Seek the cooperation of the home economics teacher in helping you plan and conduct these activities, and in arranging for the items needed.

    b. Visit the local office of the state employment service to find out employment opportunities for private-household work, working hours for the various workers, and the amount of pay received.

16. Chefs, cooks, and cook-helpers may be required to do work similar to that listed below. See how well you like these occupations by doing some of the activities.

    a. Do the following activities:
        (1) Prepare a raw salad (four servings).
        (2) Prepare biscuits, using soft dough.
        (3) Prepare soup, (four servings) using meat, extracted juices, and seasonings.
        (4) Prepare a meat dish (four servings).
        (5) Prepare a dessert (four servings).

Seek the cooperation of the home economics teacher in helping you plan and conduct these activities, and in arranging for the items needed.

b. Plan a trip to a restaurant:
   (1) Compile a list of kitchen equipment used in this restaurant.
   (2) Compile a list of storage equipment for food preservation.
   (3) Write down the weekly food menu.
   (4) Write down the duties being performed by the cooks.

Plan to spend some time in the kitchen observing the work. If your interest in being a cook is strong, volunteer to assist the cook for several hours. You may also apply for part-time work during the summer months.

c. Write to the following sources for additional information:

American Hotel Association, 221 West 57th St., New York, N.Y. 10019.

Educational Director, National Restaurant Association, 1530 North Lake Shore Drive, Chicago, Illinois 60610.

Council on Hotel, Restaurant and Institutional Education, Statler Hall, Cornell University, Ithaca, N.Y. 14850.

17. Engage in activities related to the occupations of waiter and waitress.
   a. Plan the following mock activity:
      (1) Arrange for the following items to be used in the activity: Food order blanks, table and chairs, table cloth, menus, and eating and drinking utensils.
      (2) Prepare the table correctly for the customer.
      (3) Take an order from a customer (student from occupational orientation class), using the order blank.
      (4) Greet the customer as he comes in.
      (5) Hand menu to customer for selection of food and drink.
      (6) Assist customer in making a choice, if necessary.
      (7) Take customer's order, using the order blank.
      (8) Serve the food and drink to customer.
      (9) Hand bill to customer when finished.
      (10) Collect the money for the meal.
      (11) Clean the table.
   b. Go to several eating places where waitresses and/or waiters are on duty. Order a meal, or, if you prefer, order only a drink, a salad, or a dessert. Write a summary of your observations. Include the following.
      (1) Location of each place visited.
      (2) Relative size of the places visited, volume of business, and number of waiters and waitresses on duty.
      (3) Working environment—how nice is each establishment?
      (4) The type of food service—short orders, take out, etc.
      (5) Specialties—this information usually is on the menu.
      (6) Duties performed by the waiters and waitresses.
   c. Volunteer to assist in minor waiter or waitress duties at a local restaurant. This may lead to a part-time job after school hours and during the summer months.
   d. Write to the following source for additional information:

Council on Hotel, Restaurant, and Institutional Education, Statler Hall, Cornell University, Ithaca, New York 14850.

18. Investigate the occupation of a bellhop.
   a. Visit the local office of the state employment service to find out about employment opportunities for bellhops. Arrange to talk with a bellhop employed at a local hotel about the nature of his duties, the work hours, pay received through tips, and methods

of entering the occupation. You may also visit with the personnel manager and talk with him about the work of bellhops and bell captains.

b. Write the following source for additional information:

American Hotel and Motel Association, 221 West 57th St., New York, N.Y. 10019.

19. Many young people view the work of airline stewards and stewardesses as glamorous. Determine this for yourself.

Plan to do one or more of the following activities:

a. Visit with stewards or stewardesses employed by airline companies, or talk with those employed in airline personnel offices about the occupational requirements.

b. Obtain brochures from major airline companies and private training schools describing the work of airline stewardesses.

Write the following sources for information:

Air Line Stewards and Stewardesses Association International, 55th and Cicero Ave., Chicago, Illinois 60638.

Correspondence Inquiry Branch MS-126, Federal Aviation Agency, Washington, D.C.

c. Obtain part-time work to gain business experience. Contribute time in community service work to get experience in dealing with people.

d. View the following film:

The Stewardess Story. Available from Modern Talking Picture Service
214 South Cleveland Street
Memphis, Tennessee 38104

20. Investigate the occupation of a taxi driver. Do one of the following activities:

a. Observe a taxi driver by getting permission to ride in a taxi and by asking the driver questions about the occupation.

b. Arrange to visit with the personnel director of a taxi cab company. Determine how taxi drivers are paid, working hours, fringe benefits, and other information pertaining to the occupation.

21. Explore the work of a service station attendant by doing one of the following:

a. Interview several service station attendants. Observe for an hour the duties performed by the attendant.

b. Arrange to spend some time helping the attendant around a service station.

c. Write to the following source for information:

American Petroleum Institute, Marketing Division, 1271 Avenue of the Americas, New York, N.Y. 10020.

22. Make a list of courses offered in your school. Investigate how these courses aid in developing skills needed for employment in Service occupations. Find out which courses in your school may lead directly to employment after graduation.

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VIII. Exploring Business Contact Occupations

If you enjoy face-to-face contact with people you may find one or more occupations in the Business Contact Group which interest you. Occupations which involve attempting to persuade other people to do a certain thing or to buy a certain product are included. By exploring the occupations in this Group, you should be able to determine if you like any of them.

The following questions about occupations in the Business Contact Group will be discussed:

1. **What occupations are in the Business Contact Group?**
2. **What is the nature of the work in Business Contact occupations?**
3. **How important are Business Contact occupations?**
4. **What education or training is desirable for success in Business Contact occupations?**
5. **Where is employment in Business Contact occupations found?**

1. What occupations are in the Business Contact Group?

The Business Contact Group does not contain many occupations. It is the smallest of the eight Groups. Only those occupations involving personal persuasion are included. Closely related occupations which involve routine work are in the Organization Group.

Examples of occupations in the Business Contact Group are listed below. They are shown according to level of classification. A brief description follows each title. Other references should be consulted for additional information about specific occupations.

Level 1

Promoter—top management or public relations person who undertakes the promotion of a company or product.

Level 2

Public relations worker—plans activities and publicity to promote favorable opinions of a product or business. This person may work with media such as magazines, newspapers, radio, and television in conducting promotional campaigns.

Level 3

Insurance agent—contacts prospective customers in planning adequate protection for a customer's family, and sells policies or contracts which protect individuals and businesses against future losses and financial pressures.

Leaseman—persuades property owners to lease land for the construction of buildings or other facilities. A leaseman may also negotiate lease agreements and royalty contracts for oil exploration companies.

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Salesman, automobile—sells new and/or used cars and trucks; contacts prospective buyers, appraises trade-in value of old car, and arranges for financing and delivery of new car.

Salesman, manufacturer's—visits prospective customers to promote and sell a product or line of products.

Salesman, real estate—represents property owners who want to sell and finds potential buyers for residential and commercial properties; may also rent and manage properties, make appraisals, and arrange for loans to finance purchases.

Salesman, securities—buys or sells stocks, bonds, or shares in mutual funds; deals with individuals and large organizations and provides many kinds of related services in order to meet the customer's investment objective.

Level 4

Auctioneer—sells various goods at an auction to the highest bidder; must be able to appraise the goods being sold and stimulate buyers to bid. Auctioneers may specialize in livestock, furniture, tobacco, automobiles, or other areas.

Buyer—purchases goods to be resold later for a profit.

Demonstrator—shows how a product is used or prepared in order to create interest in a prospective buyer.

Routeman—drives panel or light truck over assigned route, sells and delivers goods, or provides services; uses selling ability to increase sales to existing customers and to obtain new customers.

Salesman, door-to-door—calls on prospective customers in their homes to show products, demonstrate their uses, or explain the preparation of products. Such a person arranges for the sale, delivery, and service of items.

Level 5

Peddler—sells various merchandise on streets or from door-to-door. A basket, push-cart, or truck may be used to transport the items being sold. Peddlers sell such items as fruit, vegetables, flowers, or ice cream.

Level 6

No occupations are listed under this level in the Business Contact Group.

2. *What is the nature of the work in Business Contact occupations?*

Most of the occupations in the Business Contact Group involve selling. It is the kind of selling which requires that a person be able to persuade another person to buy one product instead of a competitive product. Sales occupations as found in food stores and discount centers usually do not involve persuasion. In these kinds of stores, the goods are displayed and a customer either buys them or passes them up.

Salespersons in this Group must know their products. This means that many hours may be required to attend sales meetings and study the specifications of the products. They usually need to be aware of the advantages of their products over similar products of other manufacturers. New or improved products may be introduced. Each change in a product requires additional study.

The work schedule is often irregular. Frequently the work day begins after persons in other occupations have finished their work for the day. A good example is the automobile salesman. Many automobile sales are made on weekends and at night.

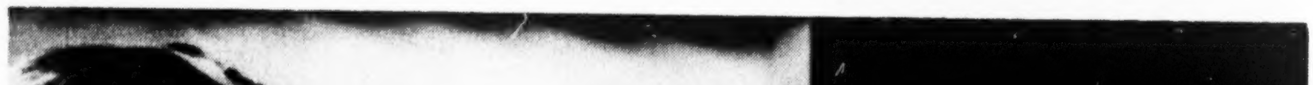
Sales work demands persons who are patient and willing to use as much time as required to make a sale. However, a salesperson must not spend so much time with a customer that other sales are lost. In addition, a salesperson may antagonize a customer if he is too persistent.

Selling involves getting to know new people. Salespersons must be able to carry on conversations with customers. Considerable time may be required to plan the approach to use in attempting to sell a product. Much of this time will be used analyzing a customer's needs in terms of the product being sold. A salesperson must also be able to display and demonstrate the product in use.

Disappointment may result when sales are missed. This is especially likely to happen if many hours have been spent in trying to make a sale. Many salespersons are paid on a commission basis; therefore, if they do not sell, they do not make any money.

Persons in certain sales occupations must travel extensively. They must frequently be away from home, perhaps for several days or weeks at a time. They must communicate by letter and telephone with customers to arrange appointments or supply information about the product being promoted.

In summary, the nature of the work of occupations in this Group involves studying and planning ways to sell a product or service. Many hours of study and analysis may be required. Long hours of patient conversation are frequently needed with a customer who may or may not buy the product being sold. And, finally, a salesperson must sell in order to be assured of an income.



A Salesman at Work. (Courtesy Eastman Kodak Company, Rochester, New York.)

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3. *How important are Business Contact occupations?*

Workers in Business Contact occupations play an important role in the movement of goods and services. The growth and profitability of many businesses are related to the ability of salespersons to sell the product that is produced. To illustrate the importance of sales occupations, some salespersons may sell the work of 25 or more workers. These 25 people would not have jobs if no one sold their products.

It has been estimated that the following number of persons are employed in certain Business Contact occupations:

Public relations workers	52,000
Insurance agents	400,000
Automobile salesmen	115,000
Real estate salesmen, (full and part-time)	800,000
Securities salesmen	155,000

4. *What education or training is desirable for success in Business Contact occupations?*

Persons employed in Business Contact occupations need to be well-educated, especially if they are to work in the upper-level occupations. Most employers require beginning workers to have at least a high school diploma. A college degree may be required by some employers. Specialized training may be needed for some occupations, such as auctioneer.

In high school, classes in communications, business mathematics, general business, and economics will be helpful to persons interested in Business Contact occupations. Many high schools have classes in sales and marketing. Such classes are especially designed to provide training in a number of sales and sales-related occupations. Students enrolled in sales and marketing classes often work part-time in local businesses. The work they do is closely related to some of the occupations in this Group.

Students who wish to specialize in a specific area might wish to select classes related to that area. For example, a young person who is interested in becoming an agricultural machinery salesman would do well to enroll in an agribusiness class. To be a good agricultural equipment salesman, one must have a knowledge of agriculture. One must know about cotton production in order to successfully sell the machinery required to produce cotton. Some of the things he would need to know are when and how to plant, how to control weeds and insects, and how to defoliate, harvest, and market.

Persons going to college who are interested in Business Contact occupations may study in a number of different areas. Courses in business, advertising, psychology, merchandising, public relations, and related areas may have specific application to occupations in this Group.

Part-time work experience during high school is helpful. Such work may be done after school hours or in the summer. It may or may not be part of a school-sponsored class or activity. School-sponsored work experience may be provided through a cooperative arrangement between the school and local businesses.

Certain personal traits are needed for success in Business Contact occupations. Many of these can be developed through classes and individual efforts at self-improvement. The following is a list of desirable traits that persons in these occupations should have:

1. Ability to work independently and make own decisions.
2. Facility with language (written and oral).
3. Outgoing personality.

4. Desire to deal with people.
5. Ability to cope with frustrations and problems in dealing with people.
6. Ability to relate to and deal with people at all levels and to recognize and cope with many different personalities.
7. Ability to exercise persistence in persuasive-type activities.
8. Ability to calculate rates, interests, dividends, etc.
9. Knowledge of credit, marketing and economic conditions, sales, psychology, and advertising.
10. Ability to plan activities, and to keep records of sales, credit and payment, and billing.
11. Ability to energetically promote a product.

5. Where is employment in Business Contact occupations found?

Employment in Business Contact occupations is found wherever people are found and wherever goods are produced and sold. Most of the opportunities in these occupations are found in cities, especially in the large industrial cities.

Occupations in this Group are found in both small and large businesses. A number of promoters, auctioneers, and salespersons may be self-employed. However, more are employed by large companies and their affiliates than by small companies.

Specific Business Contact occupations are found only in isolated areas. Several examples are:

Tobacco auctioneer—Where tobacco is grown
Livestock auctioneer—Where livestock are raised
Oil leaseman—Where oil wells may be drilled

Other occupations in this Group are found in all parts of the country. Several examples are:

Automobile salesman
Real estate salesman
Insurance agent
Routeman
Door-to-door salesman

Review Questions:

1. What distinguishes the occupations in the Business Contact Group from those in the other Groups?
2. Why do some salesmen have to work on weekends and at night?
3. How are most salesmen paid?
4. Why is it necessary to take courses in an area in which a person wishes to be a salesman? (See the example of the agricultural machinery salesman.)
5. What personal traits are needed for Business Contact occupations?
6. Why is the occupation of "tobacco auctioneer" found only in a few locations?

Suggested Activities:

1. Review various occupational information materials. Carefully note all occupations which are in the Business Contact Group. List occupations other than those given in this publication which you believe to be in the Business Contact Group.

2. Invite someone who is employed in a Business Contact occupation to visit your class and discuss the nature of his work.

3. Develop a display, bulletin board, or poster depicting occupations in the Business Contact Group. Clip pictures from magazines or newspapers which show workers in Business Contact occupations.

4. Review the want ads of a newspaper. Cut out those in the Business Contact Group and place them on a poster or bulletin board. Note where the jobs are found, the rate of pay, and requirements for entry.

5. Select one or more occupations from the Business Contact Group in which you are interested. Determine the following information for each occupation: (Your teacher may have prepared some forms for your use.)

OCCUPATIONAL STUDY OUTLINE

A. *Name of Occupation:*

B. *Duties of the Occupation:*

C. *Qualifications:* What are the personal requirements?

D. *Age:* How old must I be to enter the occupation?

E. *Sex:* Is this an occupation in which others of my sex are normally employed?

F. *Specific Physical and Health Requirements:* Am I the correct height to do the work? Are my eyesight and hearing adequate? Am I strong enough?

G. *Interest:* Do I possess this interest? If not, could I develop interest in this type of work?

H. *Abilities:* Do I possess the required abilities? If not, could I acquire the knowledge and skills necessary to do the job?

I. *Personality:* Do I possess the personal qualities necessary for doing this type of work? If not, could I develop these qualities?

J. *Values and Attitudes:* Does anything about this job violate values and attitudes I have about people and work? If so, could I adjust to situations that required that I change my values and attitudes?

K. *Preparation:* What subjects do I need to study? What special training will I need? How long will it take to receive this training? How much will it cost? Can I get this training within the state? Is work experience required for entry into this occupation? What is the method of entry into this occupation?

L. *Working Conditions on the Job:* Is it hazardous work? Is it noisy or dirty? Will I be working in shifts? Will I work indoors or outdoors? Is it hard work? Does the work require being away from home for long periods of time?

M. *Rewards from Work:* How much is the beginning pay? Is there chance for advancement? Will this work experience help me get a better job? Would I be happy doing this type of work?

N. *Employment Outlook:* How many are employed in the occupation at present? Are there employment opportunities in my community or state for this type of work?

O. *Special Requirements (such as certification, licenses, and examinations):*

6. Review the yellow pages of the local telephone directory. Prepare a list of all businesses which might have Business Contact occupations.

7. Compile a list of all the persons you know who work in Business Contact occupations. Also indicate their occupation and employer.

8. List the attempts you have made to persuade someone to do something. Indicate the times when you were successful.

9. View one or more films that show persons at work in Business Contact occupations. Some suggested films are:
   Ben Franklin Sells Today
   Salesmanship Career Opportunities
   Selling America
   (Available from Film Library, Curriculum Coordinating Unit, P.O. Drawer DX, State College, MS 39762.)

10. Invite the sales and marketing teacher in your school to visit class. Have him discuss Business Contact occupations. It would also be well to have him discuss how enrolling in a sales and marketing class can help provide the training needed for entering various occupations.

11. Form a panel of six students to discuss the importance of Business Contact occupations in the community, the state, and the nation. Each member of the panel should study these occupations before the panel performs.

12. Visit the sales and marketing department in your school. Have the teacher explain the facilities found there. (It is suggested that arrangements for the visit be made well ahead of the visit.)

13. Investigate DECA. Determine what it is, what it does, and how it functions.

14. As class members name the local businesses and firms that employ people in Business Contact occupations, make a list of them on the chalkboard. Ask if any members of the class know people employed at these places.

15. Role-play one or more of the following:
    a. An automobile salesman selling a new car.
    b. An automobile salesman selling a used car.
    c. A real estate salesman selling a house and lot in a city.
    d. An agricultural equipment salesman selling a two-row cotton picker.
    e. An insurance salesman selling life insurance.
    f. A door-to-door salesman selling magazine subscriptions.
    g. A peddler selling peanuts.

16. Investigate a Business Contact occupation. Report the following findings to the class:
    a. Nature of the work.
    b. Education and training required.
    c. Salary.
    d. Location of employment opportunities.
    e. Future of the occupation.

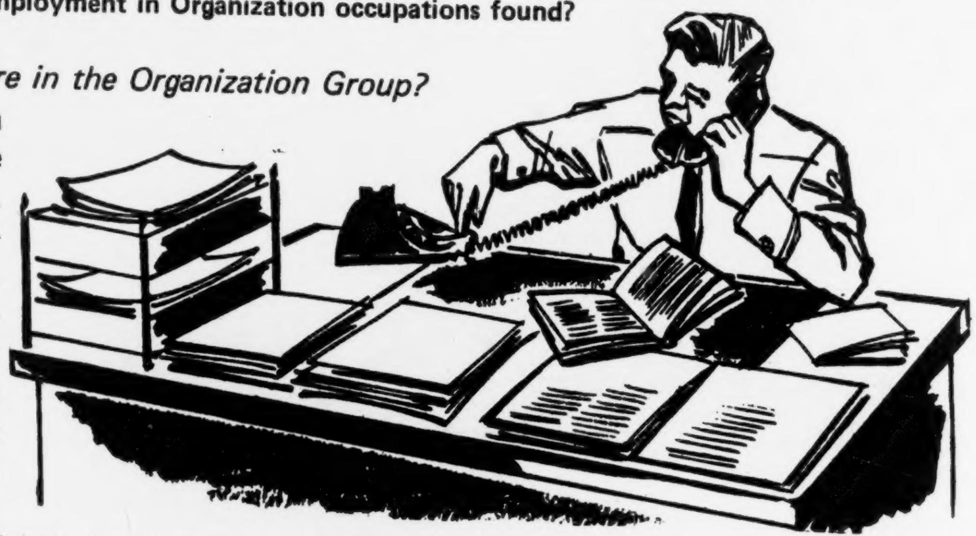
IX. Exploring Organization Occupations

Do you like occupations in which the work varies very little from day to day? You are probably unable to answer this question accurately. A study of occupations in the Organization Group will help you with your answer. Such occupations are concerned with the functioning of businesses and government agencies. A number of white collar occupations are included.

The following questions about Organization occupations will be answered:

1. **What occupations are in the Organization Group?**
2. **What is the nature of the work in Organization occupations?**
3. **How important are Organization occupations?**
4. **What education or training is desirable for success in Organization occupations?**
5. **Where is employment in Organization occupations found?**

1. What occupations are in the Organization Group?



The Organization Group contains a large number of occupations. Most of them are executive and office-type jobs. Many of the clerical occupations in government, industry, and business are included. High officials of the government are in the upper levels. The most notable government officials in Level One are the President of the United States and cabinet members who work with him. Industrial tycoons who are with the large industries are also in this level.

Many of the occupations in the Organization Group are listed below. A brief description of each is also given. Additional information about specific occupations can be obtained from various references about occupations.

Level 1

International banker—is primarily concerned with the exchange of foreign money and the maintenance of money deposits in foreign banks.

Level 2

Actuary—calculates insurance and annual payments on insurance contracts; sets aside money to meet debts; and allocates shares of surplus funds to policyholders who are participating in an insurance company.

Certified public accountant—reviews financial records and reports and gives opinions as to their reliability; advises clients on tax matters and other financial and accounting problems; and meets legal requirements of public practice.

Controller, bank—authorizes and controls the use of funds kept by the treasurer; supervises the maintenance of accounts and records; analyzes these records; and often formulates policies that concern financial problems.

Economist—compiles, processes, and interprets economic and statistical data; is concerned with the solution of economic problems arising from the production and distribution of goods and services (and studies conditions affecting production, distribution, and consumption of goods and services).

Economist, government industrial—studies and analyzes economic factors involved in production, distribution, and use of goods or services to insure maximum use of assets and to develop desirable markets; interprets effects of government regulations and restrictions on industrial policies.

Geographer, economic—analyzes the geographic distribution of economic activities, including manufacturing, mining, farming, trade, and communication.

Hospital administrator—supervises and coordinates the operation of a hospital.

Manager, advertising—plans advertising policies, establishes budgets, and determines what type of advertising methods can be most effectively used by a business.

Manager, hotel—has responsibility for operating a hotel profitably and providing the best possible services for guests; is in charge of personnel, the financial management of a hotel, and advertising.

Marketing researcher—collects, analyzes, and interprets data to determine potential sales of a product or service.

Personnel relations administrator—organizes, directs, and coordinates industrial relations activities of an organization, such as assembling and analyzing data concerning problems of absenteeism, labor turnover, and employment of physically handicapped; conducts surveys on living costs and wage rates; and studies current labor laws and regulations, etc.

Production manager, advertising—coordinates activities of design, illustration, photography, paste-up, and typography personnel to prepare advertisements for publication; and supervises workers engaged in pasting-up advertising layouts in an art department or studio.

Purchasing agent—buys raw materials, machinery, supplies, and services required by businesses or companies (considers cost, quality, quantity, and time needed).

Level 3

Accountant—compiles, analyzes, and prepares such business and financial records as profit and loss statements, balance sheets, cost studies, and tax reports.

Automotive parts counterman—purchases, stores, and issues spare parts for automotive equipment from behind a counter in a repair shop or parts store.

Cashier, bank—directs bank's monetary programs, transactions, and security measures in accordance with banking principles and legislation; receives funds from customers and employees; disburses funds; and records monetary transactions incidental to conduct of business.

Claims adjuster, insurance—investigates claims for loss or damages filed in conjunction with insurance policy and tries to effect settlement out of court.

Employment interviewer—interviews job applicants in an employment agency and refers them to prospective employers for consideration.

Housekeeper, hotel—supervises work activities of cleaning personnel to insure clean, orderly, and attractive rooms in hotels.

Programmer—works in the field of electronic data processing; writes and codes the instructions which control the work of a computer.

Secretary, private—schedules appointments, gives information to callers, takes dictation, and otherwise relieves officials of clerical work and minor administrative and business detail.

Secretary, social—attends to social, business, and personal affairs of employer.

Stenographer, court—records proceedings in law courts; specializes in shorthand reporting, either manual or machine.

Stenographer, technical—takes dictation, in shorthand, of correspondence, reports, and other matters, and transcribes dictated material, using a typewriter; may take dictation in medical, legal, or scientific terms.

Teller (all kinds)—receives and pays out money and keeps records of money and negotiable instruments involved in various transactions.

Traffic agent, airlines—sells flight tickets, reserves seats and cargo space, and takes care of the ground handling of airplanes.

Traffic manager, industrial—arranges for transportation of raw materials and finished products to and from industrial and commercial firms; determines the kind and amount of goods to be shipped, the time when delivery is needed; chooses the type of transportation, the route, and finally the particular carrier, or transportation company.

Level 4

Adding machine operator—uses machines which perform the calculations of addition, subtraction, and sometimes multiplication; transcribes the machine calculations onto business report forms or other types of records.

Automotive service advisor (manager)—confers with the customer to determine his service needs and arranges for a mechanic to do the work; waits on customers who bring their automobiles in for maintenance and repairs.

Billing machine operator—prepares statements, bills, and invoices to be sent to customer; itemizes amount customer owes; and uses billing machines with or without computing devices.

Bookkeeper, general—records and summarizes the financial transactions of a business, industry, or institutional agency.

Bookkeeping machine operator—operates simple bookkeeping machines which record monetary transactions, such as accounts payable, or, in banking operations, deposits; sorts documents to be posted; and prepares periodic trial balances.

Calculating machine operator—uses mechanical or electrically operated computers to obtain various kinds of calculations, such as division, multiplication, addition, subtraction, square root, and statistical computations.

Clerk, bank exchange—services foreign deposit accounts and determines charges for cashing or handling checks drawn against such accounts.

Clerk, bank interest—maintains records relating to interest-bearing items which are due to or from the bank; collects interest on these contracts.

Clerk, bank mortgage—types legal papers affecting title to real estate upon which money has been loaned, and maintains records relating to taxes and insurance on such properties.

Clerk, bank transit—sorts bank items such as checks and drafts on other banks, lists and totals the amounts involved, and prepares the documents so that they can be mailed for collection.

Clerk, bank trust investment—posts the daily investment transactions of bank customers.

Clerk, billing—receives the payments made by customers for goods and services; prepares invoices and bills of lading.

Clerk, disbursement—verifies accuracy of loan applications and prepares a file for each loan transaction.

Clerk supervisor, shipping—supervises and coordinates activities of workers engaged in packing and shipping merchandise or material and keeps records of shipments.

Conductor, railroad passenger—supervises and coordinates activities of a train crew engaged in transporting passengers on passenger trains.

Console operator—checks and controls electronic digital computer to process business, scientific, engineering, or other data according to operating instructions; operates the computer; examines the programmer's instruction sheet for the run and ascertains the procedure to be followed.

Front office clerk, hotel—accommodates hotel patrons by performing any combination of the following duties: registering and assigning rooms to guests; issuing room keys and instructions to bellman; date-stamping, sorting, and racking incoming mail and messages; transmitting and receiving messages, checking out guests, and receiving payments for services provided.

High-speed printer operator—operates high-speed printing machine to convert scientific, engineering, or business information previously recorded on reels of tape into printed records.

Proof machine operator, bank—sorts, records, and proofs records of bank transactions, such as checks, deposit slips, and withdrawal slips, using proof machine.

Receptionist—receives clients or customers coming into an establishment, determines their wants, and directs them accordingly.

Salesperson, retail—displays, describes, and sells merchandise such as hardware, furniture, and clothing.

Station agent, railroad—supervises and coordinates activities of workers engaged in selling tickets, checking baggage, and maintaining building and grounds of railroad station.

Stenographer, general—takes fairly routine dictation and performs routine office tasks; and transcribes dictated material, using typewriter.

Tape librarian—classifies catalogs, stores tapes, and makes them available when they are needed again.

Level 5

Cashier, box office—sells tickets for admission to places of entertainment, such as skating rinks, baseball parks, stadiums, and amusement parks.

Cashier, checkout—itemizes and totals customer's purchases in self-service grocery or department store, using cash register; collects money from customer and makes change; may stock shelves, weigh items, bag merchandise, and issue trading stamps.

Clerk, accounting—performs a variety of routine calculating, posting, and typing duties related to accounting.

Clerk, insurance policy change—compiles data on changes in insurance policies and enters changes in beneficiaries and coverage on policies, in accordance with the instructions given by agents.

Clerk, mortgage—types the legal papers necessary for real estate titles, records the transactions, and maintains card file of records.

Clerk, shipping—checks to see that an order has been filled correctly before it is shipped, prepares bills of lading and any other shipping forms needed; maintains records of the weight and cost of each shipment; checks each shipment for correct address; and keeps accurate records on each shipment.

Clerk, typist—performs general clerical work requiring use of typewriter in majority of duties; combines typing with filing, sorting mail, answering the telephone, and other general office work.

Clerk, waybill—types shipping tickets and other specialized forms in a railroad office and performs other types of general office work.

Duplicating machine operator—reproduces handwritten or typewritten matter, using a duplicating machine; may keep a record of the number of copies made.

Embossing machine operator—operates machine to emboss names and addresses on metallic and nonmetallic plates for use in duplicating and addressing machines.

Insurance checker—checks the information entered on policies by other clerical workers to be certain that the work is accurate.

Key punch operator—uses machines, similar in action to typewriters, to punch holes in a card in such a position that each hole can be identified as representing a specific item of information.

Mail carrier—sorts mail and delivers and collects mail on assigned routes.

Mail machine operator, preparing—runs automatic equipment which handles outgoing mail; feeds the mail into machines that will open envelopes, fold and insert mail enclosures into the envelopes, and seal, address, and stamp them.

PBX operator—works at switch boards in business establishments operating a cord or cordless switch board; assists people in placing calls and helps locate desired parties; keeps record of calls completed, charges incurred, and the department to be charged.

Policy writer, insurance—types from approved insurance applications onto policy forms, the name and address of the policyholder, amount of the policy, premium rate, and other information.

Postal clerk—sorts incoming and outgoing mail in a post office and serves the public at the windows in post office lobbies selling stamps and money orders and providing other services.

Sorter, bank—separates bank documents, checks, deposit slips, and other bank items into different groups and tabulates them so that the entries are made to the proper account.

Tabulating machine operator—operates a machine that processes information from tabulating cards into printed records; routes processed cards to the next work station.

Tape perforator operator—using a special typewriter, types letters, reports, and other material from master copy to perforated tape; pastes gummed paper over holes to correct errors; may file perforated rolls; and may operate automatic typewriter that reproduces material from perforated tape or paper.

Telegrapher, railroad—transmits and receives messages, train orders, and car reports in Morse code, using manual or semi-automatic key equipment.

Telephone operator—aids persons using telephone services by placing calls and making telephone connections.

Ticket agent, railroad—collects fares from passengers in a train station as they pass through the waiting room to the platform or after they board the train.

Transcribing machine operator—transcribes letters, reports, or other recorded data, using a transcribing (voice reproducing) machine and a typewriter.

Typist, data—converts alphabetic, numeric and symbolic data into coded form on punched cards or tapes.

Level 6

Mail machine operator, handling—tends machine that automatically seals envelopes and imprints postmark on envelopes or tape to be pasted on packages.

Sorting machine operator—tends machine that automatically sorts perforated tabulating cards into specified groups.

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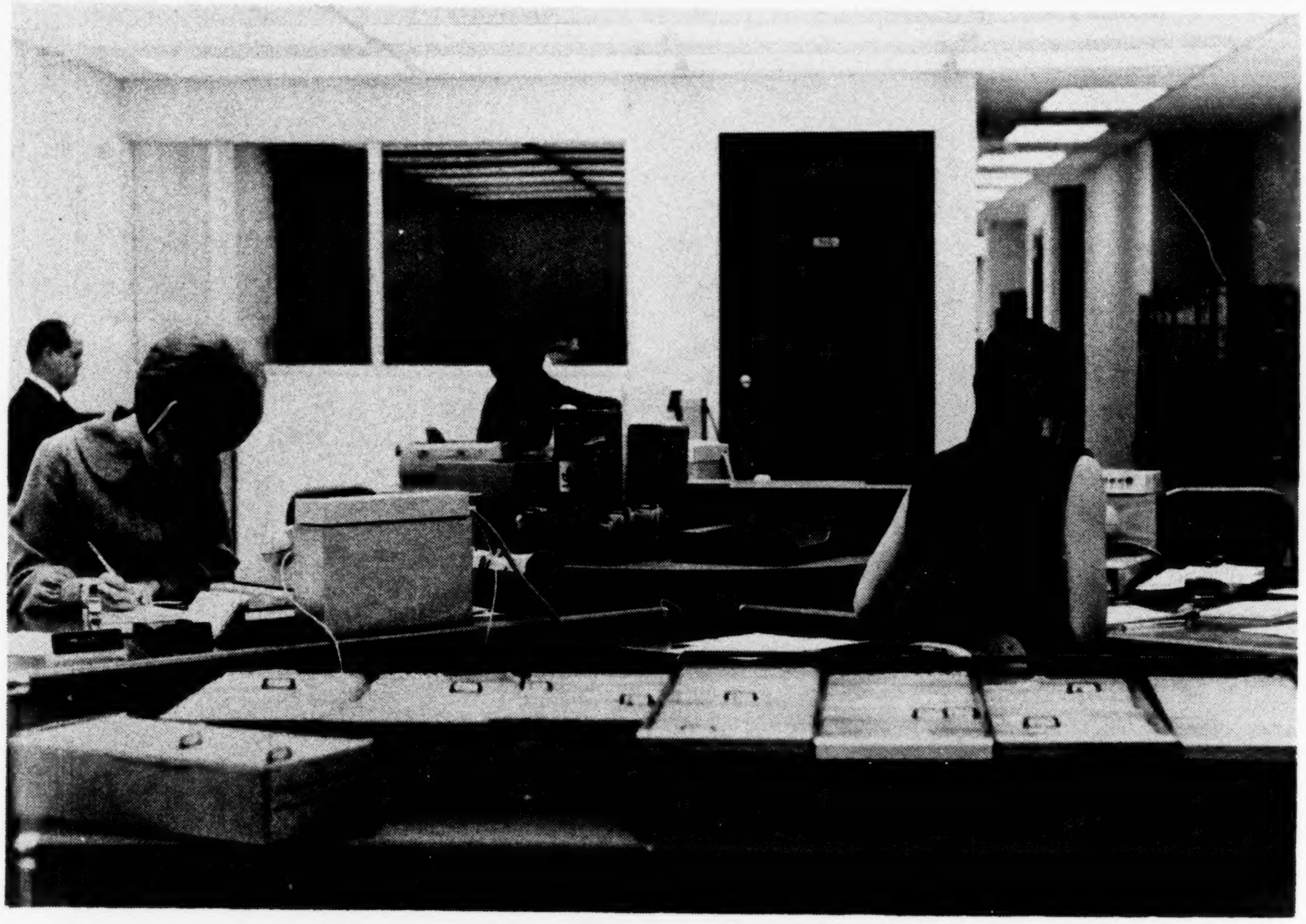
2. What is the nature of the work in Organization occupations?

Most of the occupations in this category can be called "desk jobs." The work can be characterized as "paper work." An accountant works largely with the financial records of an organization. While a secretary may do many types of jobs for her employer, in each case the work is mainly done behind a desk and involves written materials—paper work.

A few of the occupations in this category require considerable contact with people. Some require movement both indoors and outdoors. Primarily, however, these occupations require a person to stay behind a desk and work with written materials and various types of machines such as adding machines, calculators, and data processing equipment.

Earnings vary greatly from one occupation in this category to another. In these occupations, as well as in occupations found in the other categories, earnings may depend on the amount of education one has, the size and type of place of employment, special training and examinations taken, degree of responsibility one must assume, and numerous other factors.

Fringe benefits for all of these occupations are very similar. These benefits may include: vacations with pay, paid holidays, group life insurance, hospitalization and surgical benefits, and retirement plans. Some workers receive fringe benefits that are associated with certain occupations. Banking occupations offer profit-sharing, bonus plans, or preferred banking services; and hotel housekeepers may be provided with laundry and free uniforms. Fringe benefits in any occupation may vary from one business to the next.



People at Work in Office Occupations. (Courtesy Mississippi Power and Light Company, Jackson, Mississippi.)

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3. *How important are Organization occupations?*

No one group of occupations is more important than another group. Every worker in any business or government organization has a job that must be done. Some of the workers in any establishment actually do the work; in a store the sales people do the selling, in a school the teachers do the teaching. Other people must see that the work gets done. The salesman in a store could not sell if someone did not produce the products to sell and provide a place in which to sell them. Teachers could not teach as well if the school were not organized and equipped.

Every business, industry, and government agency has workers in Organization occupations. These are the workers who keep records, type letters, operate office machines, and handle other details necessary for efficient operation. It is obvious that millions of workers in the United States are in Organization occupations.

It has been estimated that the following number of persons are employed in the occupations listed below. These represent only a few of the occupations in this Group:

Actuary	3,100
Certified public accountants	100,000
Economist	20,000
Secretary	2,400,000
Stenographer	11,000
Cashier	700,000
Bookkeeper	1,200,000
Typist	700,000
Receptionist	225,000

4. *What education or training is desirable for success in Organization occupations?*

The general educational requirements for entrance into an occupation in Level One is a minimum of a bachelor's degree, usually in a subject area closely related to the occupation. However, education alone does not place one in this level. Several years of work experience and diligent preparation are necessary to reach it.

A bachelor's degree in a particular subject area is usually required for entry into the occupations in Level Two. Some of the occupations, such as those of an actuary and a certified public accountant, require special examinations. An actuary must pass a series of examinations to gain full professional status. Five to ten years may be required to complete the examinations. Accountants must pass the CPA examination provided by the American Institute of Public Accountants and be licensed or registered by the state board of accountancy before they can practice as "certified public accountants." Often special training may be needed to enter or advance in Level Two occupations. For example, one wishing to be a bank controller may be required to participate in a well-organized officer-training program requiring from six months to one year to complete.

Economists, who are found in this Group, must have a thorough grounding in economic theory, economic history, and methods of economic analysis. Those who wish to advance to positions that require more responsibility should plan to do graduate work.

Occupations in Level Three usually require a high school education for entrance. Some employers of persons in such occupations as employment interviewer and programmer prefer employees who have a college degree. Additional training in some occupations (programmer, accountant, etc.) is important for advancing to levels of greater responsibility.

An Office Worker in a Computer Room. (Courtesy Schering Corporation, Bloomfield, New Jersey.)

In Level Four a high school education is required for most of the occupations listed. It is preferable for persons in many of these occupations to have more education, especially vocational education.

Certain high school vocational courses relating to the specific occupations are important in entering Level Five. Typewriting is a "must" for one who wishes to be a typist or a clerk typist. A course in business machines would contribute to success as a duplicating machine operator, transcribing machine operator, or a tabulating machine operator. Special training is required for some other occupations in this Group, such as a checkout cashier.

Level Six occupations do not require a high school education; however, persons who have this education may be preferred over those who do not. On-the-job training would possibly be the only training a mail machine operator and a sorting machine operator would need.

5. Where is employment in Organization occupations found?

Any business employing more than just a few people must have someone who is responsible for organizing and directing the work of others. Most businesses, industries, schools, and city and county government agencies have occupations in this Group.

A review of the want ads in a newspaper will reveal a number of opportunities in Organization occupations. Most of the opportunities are found near cities with business and government offices. For example, many opportunities are available in government jobs in the city in which a state capitol is located. Numerous state offices are located in and around the capitol. The same is true of cities which have offices of the federal government.

Review Questions:

1. What is a "white collar" job? List examples.
2. What is meant by "desk jobs"? "paper work"?
3. Why are many opportunities in Organization occupations found near state capitols?

Suggested Activities:

1. Review various occupational information materials. Carefully note all occupations which are in the Organization Group. List occupations other than those given in this publication which you believe to be in the Organization Group.

2. Select one or more occupations in the Organization Group in which you are interested. Determine the following information for each occupation: (Your teacher may have prepared some forms for your use.)

OCCUPATIONAL STUDY OUTLINE

A. *Name of Occupation:*

B. *Duties of the Occupation:*

C. *Qualifications:* What are the personal requirements?

D. *Age:* How old must I be to enter the occupation?

E. *Sex:* Is this an occupation in which others of my sex are normally employed?

F. *Specific Physical and Health Requirements:* Am I the correct height to do the work? Are my eyesight and hearing adequate? Am I strong enough?

G. *Interest:* Do I possess this interest? If not, could I develop interest in this type of work?

H. *Abilities:* Do I possess the required abilities? If not, could I acquire the knowledge and skills necessary to do the job?

I. *Personality:* Do I possess the personal qualities necessary for doing this type of work? If not, could I develop these qualities?

J. *Values and Attitudes:* Does anything about this job violate values and attitudes I have about people and work? If so, could I adjust to situations that required that I change my values and attitudes?

K. *Preparation:* What subjects do I need to study? What special training will I need? How long will it take to receive this training? How much will it cost? Can I get this training within the state? Is work experience required for entry into this occupation? What is the method of entry into this occupation?

L. *Working Conditions on the Job:* Is it hazardous work? Is it noisy or dirty? Will I be working in shifts? Will I work indoors or outdoors? Is it hard work? Does the work require being away from home for long periods of time?

M. *Rewards from Work:* How much is the beginning pay? Is there chance for advancement? Will this work experience help me get a better job? Would I be happy doing this type of work?

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N. *Employment Outlook:* How many are employed in the occupation at present? Are there employment opportunities in my community or state for this type of work?

O. *Special Requirements (such as certification, licenses, and examinations):*

3. Invite someone who is employed in an Organization occupation to visit your class and discuss the nature of his work.

4. Develop a display, bulletin board, or poster depicting occupations in the Organization Group. Clip pictures from magazines or newspapers which show workers in Organization occupations.

5. Review the want ads of a newspaper. Cut out and place those in the Organization Group on a poster or bulletin board. Note where the jobs are found, the rate of pay, and requirements for entry.

6. Review the yellow pages of the local telephone directory. Compile a list of all businesses which might have Organization occupations.

7. Prepare a list of all the persons you know who work in Organization occupations. Also indicate their occupations and employers.

8. Invite the business teacher in your school to visit class. Have him discuss Organization occupations that are related to business subjects. It would also be well to have him discuss how enrolling in a business education class can help provide the training needed for entering various occupations.

9. Visit the business education department in your school. Have the teacher explain the facilities found there. (It is suggested that arrangements be made well ahead of the visit.)

10. Investigate FBLA. Determine what it is, what it does, and how it functions.

11. As the class members name the local businesses and firms that employ people in Organization occupations, list them on the chalkboard. Ask if any members of the class know people employed at these places.

12. The activities listed below are representative of the following banking occupations:

    Cashier
    Clerk, country collection
    Clerk, exchange
    Clerk, interest
    Clerk, mortgage
    Clerk, reconcilement teller
    Clerk, transit
    Clerk, trust investment
    Controller
    Loan officer
    Proof machine operator
    Sorter

    a. Arrange for an interview with a person in the specific banking occupation in which you have an interest. Prior to the interview, prepare a list of questions that you would like to have answered during the interview such as, his duties, and how he became interested in his occupation. Read any information you can find on interviewing techniques, proper dress for an interview, etc. Collect any forms from him that relate to his specific occupation. Practice filling out the forms you acquired.

    b. Have the occupational orientation teacher arrange for you to tour a bank. Write a report about the tour. Be prepared to give an oral report to the class.

13. The activities listed below are representative of the following business machines occupations:

    Adding machine operator
    Billing machine operator
    Bookkeeping machine operator
    High speed printer operator
    Keypunch operator
    Programmer

Calculating machine operator
Cardiotape converter operator
Clerk, accounting
Clerk, shipping
Clerk, typist
Clerk, waybill
Console operator
Embossing machine operator
Sorting machine operator
Stenographer, court
Stenographer, general
Stenographer, technical
Tabulating machine operator
Tape perforator operator
Transcribing machine operator
Typist, data

a. Arrange for an interview with a person in the specific occupation in which you have an interest. Prior to the interview, prepare a list of questions that you would like to have answered during the interview, such as his duties, and how he became interested in his occupation. Read any information you can find on interviewing techniques, proper dress for an interview, etc.

b. Observe the business teacher giving demonstrations on the use of various types of business machines—typewriter, adding machine, duplicating machine, etc. If possible, after observing the demonstrations, practice using these machines.

c. Learn the parts and some of the keys of the typewriter by going through the first ten lessons in a typewriting textbook. Have the occupational orientation teacher arrange to borrow a typewriter for your use, or arrange for you to participate in a typewriting class during the occupational orientation class period or a free period.

14. The activities listed below relate to the occupation of economist.

    a. Arrange for an interview with a person in the specific occupation in which you have an interest. Before the interview, compile a list of questions you would like to have answered.

    b. Have the occupational teacher help you arrange an interview with the local Chamber of Commerce director. Acquire information from him on trends in employment, sales tax collections, and business growth in your local community. Study your findings and write a report to turn in to the occupational orientation teacher. Prepare a chart illustrating the information you acquired. Be prepared to give an oral report to your class.

15. Activities representative of certain managerial occupations are listed below. Some of the occupations involved are:

    Clerk supervisor, shipping
    Hospital administrator
    Housekeeper, hotel
    Manager, advertising
    Manager, hotel
    Personnel relations administrator
    Production manager, advertising
    Traffic manager, industrial

    a. Arrange for an interview with a person in the specific occupation in which you have an interest.

    b. Make a list of characteristics that you would want employees under you to possess. For example, initiative, honesty, loyalty, etc. Discuss this list with the occupational orientation teacher and ask for his advice as to other characteristics.

    c. Prepare a plan of housekeeping for your classroom and/or laboratory which will involve all class members. Post the different assignments on the bulletin board. Carry through the plan under your direction.

16. The following activities relate to mailing occupations in an office and in the post office.

    a. Arrange for an interview with a person in the specific occupation in which you have an interest. Plan your questions before the interview.

    b. Have the occupational orientation teacher arrange to borrow the school's postal scale. After learning how to read the scale, practice weighing several pieces of mail and determine how much postage each requires.

c. With the occupational orientation teacher's assistance, arrange for a tour of the local post office. Acquire a list of postal rates for different classes of mail. Become familiar with these rates. Write a report about the tour.

d. Provide each of your classmates with three 3-inch x 5-inch cards. Have them address the cards as if they were actually going to mail them. Make sure they remember to add the zip code. Take up the cards and sort them in ascending order according to the zip code numbers.

17. The following activities relate to office occupations.

a. Arrange for an interview with a person in one of the following occupations in which you have an interest. Plan your interview with the assistance of the occupational orientation teacher.

Accountant
Bookkeeper, general
Certified public accountant
Clerk, billing
Clerk, disbursement
Receptionist
Secretary, private
Secretary, social

b. Have the occupational orientation teacher borrow the senior high tele-training program from the telephone company. (It is a free service.) Also acquire the following free booklets from the same source: "How to Make Friends by Telephone," "The Voice With a Smile," and "Win More Friends by Telephone." He should contact:

State Public Relations Manager
South Central Bell Telephone Company
P.O. Box 811
Jackson, MS 39205

c. After observing the correct procedure to follow in wrapping a package to be mailed, practice wrapping several different sizes and shapes of packages. If supplies such as wrapping paper and string are not available in the classroom, bring some large brown paper bags and/or some newspaper and string from home.

d. Borrow a typewriting book from the business teacher. Study its illustrations on folding letters for small and large envelopes. Practice folding several letters for each size of envelope.

e. Interview the person(s) in a local business who is responsible for the billing and disbursement duties in his organization. Prepare a list of questions prior to the interview that you would like to have answered. For example, how often bills are mailed or payments made, if any advertising is enclosed with the bills, etc. Ask for any information he can give about billing and disbursement procedures. Write a report about your findings.

f. Acquire samples of the different types of forms used in filling out income tax returns. These may be obtained from the Internal Revenue Service or local post office. Become familiar with these forms, and know the purposes of each.

g. Write for a social security card if you do not have one. Forms for requesting this card can be obtained from the post office in your town.

h. Borrow a bookkeeping textbook from the business teacher. Study the chapter on preparing a simple balance sheet. Ask the business teacher to explain any prints you do not understand. Have the occupational orientation teacher assign you a simple balance sheet to prepare. Complete the problem and give it to the teacher for evaluation.

i. Read any information you can find on balancing a bank statement. A bookkeeping textbook is one source where this information can be found. The teacher will assign you a problem that involves balancing a bank statement. Complete the problem and give it to the teacher for evaluation.

18. Some activities related to retailing occupations are listed below:

   a. Arrange for an interview with a person in one of the following occupations in which you have an interest.

      Auto parts counterman
      Auto service advisor (manager)
      Cashier, box office
      Cashier, checkout
      Front office clerk, hotel
      Salesperson, retail

   b. Obtain a copy of the free booklet, "Tips on Making Change," which can be procured from:

      Manager
      National Cash Register Company (NCR)
      6210 I-55 North
      Jackson, MS 39212

      Study this booklet carefully. Have your teacher to supply you with play money so you can practice making change. Have a classmate pretend to be a customer in a store. He will give you a certain denomination of money and you will make change according to the amount of merchandise he is pretending to buy.

   c. Acquire sample blank sales tickets from several stores in your location. Ask someone in one of the stores to show you how to fill out the slip. Practice filling out the sales tickets you have accumulated.

   d. Practice calculating sales tax for several different amounts of money. Have the teacher check your calculations for accuracy.

   e. Secure some sample blank shop tickets from a garage in your town. Have someone in the garage show you how they should be filled out. Practice filling out the other samples you acquired.

19. Some activities for those interested in occupations with the telephone company are:

   a. Invite an employee of the local telephone company to speak to the class on occupations with the telephone company.

   b. Arrange a tour of a telephone company building or other facility.

20. Compile a list of all classes in your school which might apply to Organization occupations.

X. Exploring Technology Occupations

Most Technology occupations involve physical activity. You may find an interesting occupation in this Group if you like to be active. Included here are those occupations concerned with modern industry. Technology occupations involve producing, maintaining, and transporting goods. Many of these involve working with one's hands. They usually involve building and assembling a variety of products.

Answering the following questions will assist in understanding Technology occupations:

1. **What occupations are in the Technology Group?**
2. **What is the nature of construction occupations?**
3. **What is the nature of aviation occupations?**
4. **What is the nature of electric power occupations?**
5. **What is the nature of telephone occupations?**
6. **What is the nature of machine operation occupations?**
7. **What is the nature of mechanics occupations?**
8. **What is the nature of printing occupations?**
9. **What is the nature of railroad occupations?**
10. **What is the nature of engineering occupations?**

1. What occupations are in the Technology Group?

The Technology Group contains a large number of occupations. The term "technology" has considerable variation in meaning. As used here, it includes all of the means by which material objects are produced. It includes the designing, producing, and servicing of products.

Occupations in engineering, crafts, and the machine trades are in this Group. In addition, some of the occupations in transportation and communication are included. Many of the persons trained in the physical sciences work in Technology occupations.

The Technology Group includes several broad occupational areas. These areas involve occupations in construction, aviation, electric power, telephone, machine operation, mechanics, printing, railroads, and engineering. It should be noted, however, that these areas do not include all Technology occupations

Examples of occupations in the Technology Group are listed below:

Level 1

Consulting engineer—one who consults with and advises individuals with engineering problems. Such persons usually specialize in chemical, civil, or mechanical engineering.

Level 2

Aerospace engineer—designs, develops, and tests all types of aircraft and spacecraft.

Agricultural engineer—designs, tests, and develops equipment and methods to improve the efficiency and economy of the production, processing, and distribution of food and other agricultural products.

Air traffic controller—gives instructions, advice, and information to pilots by radio in order to avoid aircraft collisions when landing and to minimize delays as planes fly between, or in the vicinity of airports.

Ceramic engineer—develops methods for processing clay, silicates, and other nonmetallic minerals into glassware, cement, bricks, and coatings for missile nose cones.

Chemical engineer—plans, designs, and constructs chemical plants and equipment; researches and develops improvements in production of large quantities of chemicals to place on markets; researches and develops synthetic rubber and textile fibers, antibiotics, plastics, and other new products.

Civil engineer—designs and supervises the construction of highways, bridges, airstrips, dams, sewerage systems, and many other types of structures.

Dispatcher, airline—authorizes and regulates the safe and efficient flow of commercial flights by talking with the airplane captains through radio equipment at the airport terminal and aboard the aircraft.

Electrical engineer—designs, develops, and assists in producing electrical and electronic equipment.

Industrial engineer—seeks the best uses of men, materials, and machines in production processes in industry, including selecting tools and machines, conducting motion and time studies, and planning work flow and work areas.

Mechanical engineer—designs and assists in the manufacture of internal combustion engines, jet and rocket engines, gas and steam turbines, nuclear reactors, and other motors and machines.

Metallurgical engineer—assists in processing metals which are free from other metallic or nonmetallic materials; studies the physical characteristics of metals and their alloys, and works with methods of developing these metals into finished products.

Mining engineer—assists in locating and removing iron, copper, limestone, gypsum, coal, petroleum, and natural gas from the earth; determines means for processing these minerals to remove unwanted substances.

Pilot—prepares flight plans; checks and operates aircraft controls, equipment, and instruments necessary for flying a plane, keeping it on course, and landing it safely.

Systems analyst—studies problems of processing data and finding solutions to difficult business, scientific, and engineering problems through the use of electronic computers.

Technical writer—researches and interprets technical and scientific data; and organizes, writes, and edits this data so the reader can understand it.

Level 3

Draftsman—takes ideas, rough sketches, specifications, and calculations of engineers, architects, and designers and makes working plans which can be used to construct buildings, highways, airplanes, and thousands of other products.

Flight engineer—inspects aircraft tires, fuel tanks, and flight instruments before take-off; watches and operates many instruments during the flight to check the performance of the engine, air-conditioning system, pressure system, and electrical system; keeps records and reports mechanical failures.

Ground radio operator—transmits important messages about weather conditions and navigation between air dispatchers, air-traffic controllers, and other ground station workers and flight engineers and pilots, or other flight personnel.

Sales engineer—sells various chemical, mechanical, and electronic equipment. A professional knowledge of engineering is required.

Stationary engineer—observes meters, gauges, and other instruments to interpret the operating conditions of large boilers, diesel and steam engines, refrigerators, air conditioning machines, generators, turbines, pumps, and similar equipment used in large industrial plants and buildings; keeps records of temperatures and pressures; and operates switches and levers, and regulates valves on these instruments.

Watch engineer, electric power—supervises workers responsible for the operation and maintenance of boilers, turbines, generators, switchboards, transformers, and other power plant equipment.

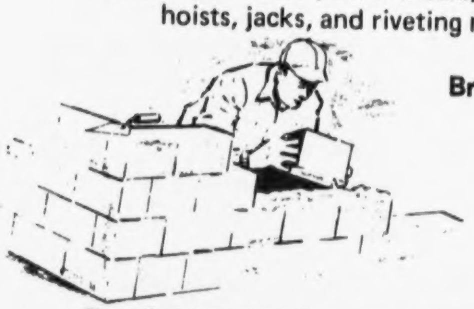
Level 4

Aircraft mechanic—corrects oil leaks, repairs landing gear malfunctions, tests radio and electronic equipment, changes oil, cleans spark plugs; inspects, services, and overhauls the engine, the wings, tail assemblies, control cables, and fuel and oil tanks.

Auto body repairman—removes dents, scratches, and old paint; replaces metal sections, glass and trim that cannot be repaired; uses a variety of hand and power tools to complete the job.

Auto mechanic—finds the cause of improper operation of the automobile, using technical know-how and testing equipment; disassembles and overhauls engines, transmissions, clutches, and rear ends; grinds valves, adjusts brakes, and aligns front ends; adjusts, repairs, and installs alternators, starters, and other parts of the ignition system.

Boilermaker—uses power shears, power presses, oxyacetylene torches, welding equipment, hoists, jacks, and riveting machines to install and repair boilers, tanks, or vats.



Bricklayer—(also known as "brick mason") reads blueprints to check the specifications and lays brick in a straight manner, both horizontally and vertically, for walks, chimneys, and other structures; uses soft mortar, levels, gauge lines, trowels, jointers, chisels, and brick saws.

Broadcast technician—sets up, operates, and maintains such radio and television station equipment as microphones, sound recorders, television cameras, magnetic video tape recorders, and motion picture equipment.

Cablesplicer, electric power—installs and repairs underground lines by pulling the cable through conduits, joining it at connecting points, and wrapping insulation around the wires at the joints.

Cameraman—starts the process of making a lithographic plate (offset printing plate) by photographing the copy of printed words or the copy of an illustration.

Carman—works in railroad shops, yards, and terminal buildings, maintaining and repairing railroad freight and passenger cars.

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Carpenter—constructs, installs, and repairs buildings and other structures made of wood; uses a variety of hand and power tools; and studies blueprints to determine the design to use.

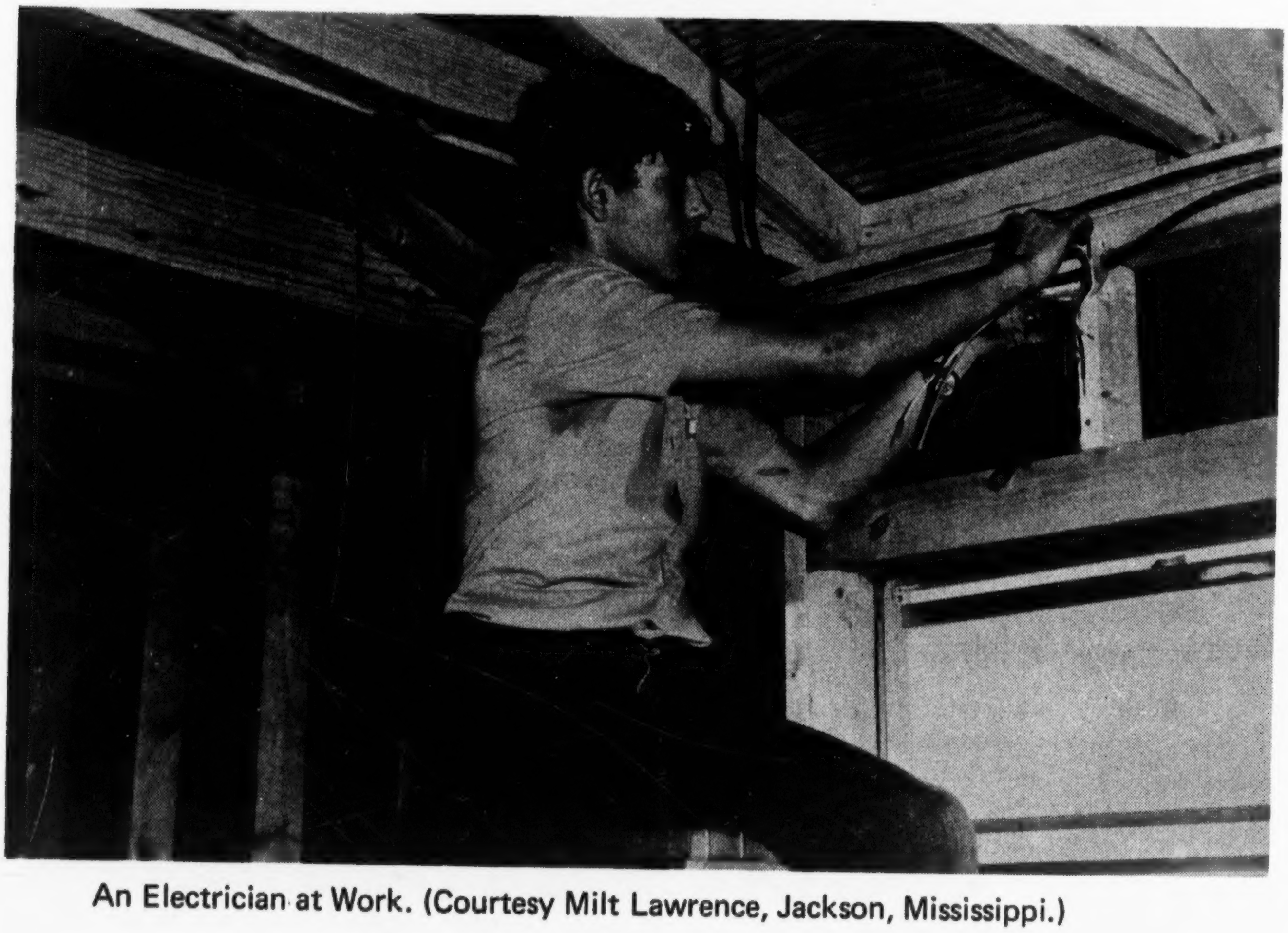
Conductor, freight—receives train orders from the railroad dispatcher and arranges departure time; arranges for repair of mechanical failures; keeps records of contents and destinations of each car, and sees that cars are collected and distributed along the route.

Coremaker—prepares cores, usually of sand, which are placed in molds to form the hollows or holes usually required in metal castings from which products will be developed.

Detailer—a draftsman who makes drawings of each part shown on a layout, giving dimensions, materials, and any other information necessary to make the drawing clear and complete for those who must produce the structure or object.

Electrician, construction—follows blueprints to install switches, wires, conduits, controls, circuit brakers, and other electrical parts in homes, industrial plants, and other structures.

Electrician, maintenance—reads blueprints of wiring, makes minor mathematical calculations; cuts, bends, and splices wire and conduit; repairs or replaces wire, fuses, transformers, coils, and switches; makes prompt repairs in electrical equipment using test lamps, ammeters, and oscilloscopes.



An Electrician at Work. (Courtesy Milt Lawrence, Jackson, Mississippi.)

Electroplater—studies specifications for plating metal; mixes a compound of the plating metal with chemicals, and determines the amount of electric current and length of time needed for the process; gets the item ready for electroplating by cleaning and covering areas not to be plated; immerses the object in the solution, and puts the object through the electroplating process; inspects the plate and measures the thickness with micrometers, calipers, and other test instruments.

Electrotyper—makes plates for book and magazine printing by the process of electroplating.

Instrument maker—follows blueprints and sketches to make, modify, or repair timing devices, barographs, balance mechanisms, and other mechanical, electrical, or electronic instruments used in aircraft and missiles, laboratory testing, etc.

Instrument repairman—inspects, tests, and repairs such instruments as automatic pilots, seismographs, thermographs, and photographic recording instruments, using a variety of test instruments and hand tools.

Jeweler—handcrafts rings, necklaces, bracelets, and other precious jewelry out of gold, silver, or platinum.

Lineman, electric power—erects power lines, splices, or replaces wires and cables, replaces insulation and transformers, replaces broken poles, and does other work to keep electricity flowing to consumers.

Lineman, telephone—digs holes, sets in telephone poles, attaches the cables to the poles; places cables in underground conduits; splices broken cables and replaces broken poles.

Locomotive engineer—operates the throttle, air brakes, and other controls of a railroad locomotive according to directions given by the conductor, outside signals, and the train radio.

Locomotive fireman—helps the locomotive engineer see that there is plenty of fuel, sand, water, flagging equipment, and tools on board; helps the engineer by looking for objects on the track, looks for fire, and occasionally takes over the controls from the engineer.

Machinist—uses blueprints to plan and select tools and materials required to shape metals, and sets up the machines so that the operation can be performed; uses scribers, calipers, micrometers, scales, and gages to obtain accuracy in the work performed.

Make-up man—assembles type and photoengravings in page form for the printing machine.

Marble setter—installs marble, shopmade terrazzo panels, artificial marble, and glass on walls and floors.

Mechanic, refrigerator, air conditioning, and heating—installs, services, and repairs window air-conditioners, large central heating and cooling systems used in homes and commercial buildings, and display and walk-in coolers used in supermarkets; uses welding and solder equipment, test bulbs, hand tools, pressure gages, leak detectors, and other tools to work on compressor motors, heating elements, thermostats, piping and tubing, sheet metal ducts, and filters.

Meterman, electric—installs, repairs, and tests utility meters used in homes and large industrial and commercial establishments.

Millwright—reads blueprints and schematic diagrams to move and install heavy industrial machinery; uses cranes, jacks, welding equipment, drills, and measuring equipment to prepare it for use.

Ornamental iron worker—assembles and installs metal stairways, catwalks, iron ladders, window sashes and doors, metal cabinets, and bank safety deposit boxes; uses wrenches, welding equipment, and other tools to fasten the iron to the structure.

Plumber and pipefitter—installs pipe systems that carry water, steam, air, or other liquids or gases; uses soldering and brazing equipment, threading tools, wrenches, hammers, saws, and other tools to cut, bend, thread, and fabricate piping to be installed.

Roofer—places asphalt, felt and hot tar, tile, slate, shingles, or some other material to waterproof roofs, walls, swimming pools, and other building surfaces; uses felt, knives, hammers, mops, and other tools to complete the job.

Set-up man—reads blueprints, job layouts, and specifications to prepare grinding machines, screw machines, lathes, drill presses, milling machines, and other machine tools for the operators to use while working with metals; uses micrometers, gages, and other instruments to prepare the machine tool for use.

Sheet metal worker—reads blueprints and drawings to do sheet metal installation and repair work for ventilation, air conditioning, and heating systems, roofing, gutters, and other purposes; uses measuring tools, hand and power shears, bending tools, punches, drills, files, and other tools.

Stonehand—works with composing type in a printing industry by arranging the type into a position in a metal frame in which it is locked into position.

Stripper—arranges and pastes typed words, illustrations, and other art work on layout sheets to be photographed by the cameraman for offset printing plates.

Structural iron worker—erects the steel framework of bridges, buildings, and other structures; pushes, pulls, and prys the prepared steel beams and girders into position while the steel parts are being held by a crane or some other hoisting equipment; fastens the steel parts by riveting or welding.

Telephone and PBX (private branch exchange) installer and repairman—services and repairs PBX systems, and telephones in homes, private businesses, etc., using wire cutters, screwdrivers, and other tools.

Tool and die maker—makes and repairs devices which are used to hold metal while it is being shoved, stamped, or drilled by machine tools; makes gages and other measuring instruments to be used in making precision metal parts; uses machine tools and precision measuring instruments to make these devices.

Tool designer—prepares sketches of designs, or ideas, for making tools and devices, special fixtures and other items to be used in mass producing articles.

Troubleman, electric power—repairs wires, transformers, and other power equipment needing service during an emergency; uses wire cutters, special wrenches, and other tools and equipment to make the repairs.

TV-radio repairman—repairs and maintains electronic equipment such as radios, televisions, and tape recorders by checking tubes, soldering loose connections, and testing circuits with a voltmeter, ohmmeter, and oscilloscope; sets up and installs electronic equipment.

Watch repairman—repairs, adjusts, and regulates watches, clocks, chronometers, electric-operating and other timepieces; uses a timing machine, demagnetizer, electric meters, and other equipment and precision tools to do the work.

Level 5

Asbestos insulation worker—covers pipes, boilers, and other equipment with such insulation materials as cork, felt, fiberglass, asbestos, and magnesia; uses hand tools such as trowels, brushes, hammers, saws and pliers to cut, fit, and attach the insulation.

Assembler—works in the apparel industry; brings together and bundles garment pieces and other items (linings, tapes, trimmings) needed to make a complete garment.

Baker—produces bread, rolls, pies, cakes, doughnuts, cookies, crackers, pretzels, ice cream cones and other items; uses instruments to control timing and temperature; greases pans, mixes dough by hand, and removes bread in plastic bags; weighs and measures ingredients of pies, cakes, etc., and mixes them by machine.

Boiler operator, electric power—observes gages, meters, and other instruments mounted on boiler panels in steam electric plants and regulates the fuel, air, and water supply in the boilers to keep the proper steam pressure for turning the turbines.

Bookbinder—folds, sews, staples, or binds magazines, books, pamphlets, business forms, calendars, and other printed items; uses power presses, trimming machines, sewing machines, and other equipment to do the binding tasks.

Brakeman, railroad—sees that the proper flags and signal lights are used; signals the engineer when to start and stop the train; throws track switches; inspects air brake equipment and looks for sparks, smoke, and other indications of sticking brakes, and overheated wheel bearings; sometimes assists the passenger train conductor by collecting tickets and looking after the needs of the passengers.

Bus driver, intercity—makes sure the bus is ready for passenger service by checking the oil, gas, water, and tires; drives the bus from city to city following time schedules and keeping within speed limits; supervises the loading and unloading of baggage; picks up and discharges passengers and takes up fares; prepares reports on mileage, time, and fares.

Bus driver, local—transports people to and from work, schools, and homes; makes regular stops every block or two to pick up and discharge passengers; collects change, tokens, tickets, or transfers; issues other transfers, sells tokens, and makes change; provides passengers with information on routes, streets, and transfer points; keeps a record of trips made, fares received, and delays in schedule.

Checker—examines garments for proper workmanship.

Corrugator—regulates the speed of a paper machine that glues together paperboard with alternate ridges and grooves; the paperboard is used in the manufacture of shipping containers.

Digester operator—determines the amount of chemicals to be used and the cooking temperature and pressure to be maintained in a digesting machine used in the wood-pulp industry; and directs the loading of the machine with wood chips and chemicals.

Floor covering installer—installs, replaces, and repairs tile, linoleum and vinyl, and carpeting on the floors of homes, businesses and other buildings; uses knives, shears, tape measures, straightedges, chalk, adhesive trowels, and other tools to cut, fit, and install floor covering.

Glazier—cuts, fits, and installs plate glass, window glass, mirrors, leaded glass panels, and shower doors; uses glass cutters, putty knives, and grinders.

Inspector, manufacturing—examines raw materials, parts, assemblies, and mass-produced finished products to see that they meet previously determined specifications or requirements.

Lather—installs metal lath, or large pieces of gypsum lath as support or holding material on which plaster, fireproofing, or tile can be applied to walls and ceilings.

Linotype operator—uses a keyboard to select letters and other characters that form lines of type for manuscript copy; reads from a copy while striking the keyboard and operating a lever that causes the slug (metal with raised letters) to be deposited in a tray.

Molder—makes molds by packing and ramming sand around a pattern (a model of an object to be duplicated) in a molding box called a flask, using such tools as mallets and air hammers.

Monotype operator—operates keyboards similar to those on a typewriter which perforates ribbons of paper used to make type by the monotype caster.

Oxygen cutter—cuts and trims metals, using a hand-guided or mechanically controlled oxygen torch.

Paper hanger—prepares surfaces to be covered, measures the area to be covered and cuts wallpaper to size; mixes a paste and applies it to the reverse side; places the paper on the wall and smooths it into place; uses rollers, cutters, and other tools to complete the work.

Patternmaker, foundry—studies a blueprint of the part to be cast, and makes a pattern, using wood or metal stock; uses such machine tools as lathes, planers, handsaws, sanders, and many hand tools.

Phototypesetting operator—sets type on a machine which produces a film or photographic print paper rather than a metal slug; presses keys, individual matrixes, or mats, which contain small film negatives; feeds perforated paper tape, or a magnetic sound tape into a machine that "reads" the tapes and photographs the characters on the tapes.

Plasterer—applies a plaster coating or stucco to walls and ceilings; applies three coats of the material to a backing to which the plaster sticks; uses trowels, straightedges, floats, and other hand tools to complete the work.

Platemaker—works with zinc or aluminum plates used in offset printing; exposes the plate through the negative or positive to strong arc lights, usually done in a vacuum printing frame; develops and chemically treats the plate to bring out the image.

Power truck operator—operates self-powered trucks which have a hydraulic or electric-lifting mechanism to lift and move coal, cartons, machinery, lumber, and other heavy materials and equipment.

Pressman—gets the offset printing press ready to print copy by installing the metal plate on the press, adjusts the pressure for proper printing, and adjusts the blankets which take the impression from the plate and transfer it to the paper; adjusts water and ink rollers, and mixes ink; manipulates the switches and levers while the press is running.

Printer pressman—prepares type forms and press plates for final printing by locking them into place on a platen or cylinder press, adjusts the ink flow on the press, provides paper for the "run," and tends the press while making the copies.

Proofreader—checks trial pages of typed copy against a proof before final copies are made; looks for misspelled words, improper sentences, and typegraphical errors; marks mistakes using a special code.

Pumpman—maintains and operates power-driven pumps that circulate processed and unprocessed petroleum products, and chemical solutions through an oil refinery plant.

Sewing machine operator—works in the apparel industry; uses sewing machines that have special attachments to sew on buttons, sew shoulder seams, attach cuffs to sleeves, sew hems, and other operations.

Stereotyper—makes duplicate molds or mats of papier-mache (a strong material composed of paper pulp) for letterpress in newspaper printing; operates a machine having heavy powerdriven steel rollers to impress type and photoengravings on a mat; adjusts gages for time, heat, and pressure.

Stillman—operates distillation units used in processing crude oil in a petroleum refining industry; watches instrument readings and regulates the flow of air and changes in temperature and oil pressure.

Stonemason—works with a set of drawings to set natural cut stone such as marble, granite, or limestone, and artificial stone made from cement or other masonry material; works with a derrickman who helps put the stones in place; uses chisels, hammers, trowels, and brushing tools to put the stones in place, fill the cracks, and clean the stone.

Sub-station operator, electric power—directs the flow of electric current out of a substation by means of a switchboard; observes ammeters, voltmeters, and other types of instruments on the switchboard; operates levers to connect or break the flow of current; checks the operation of equipment.

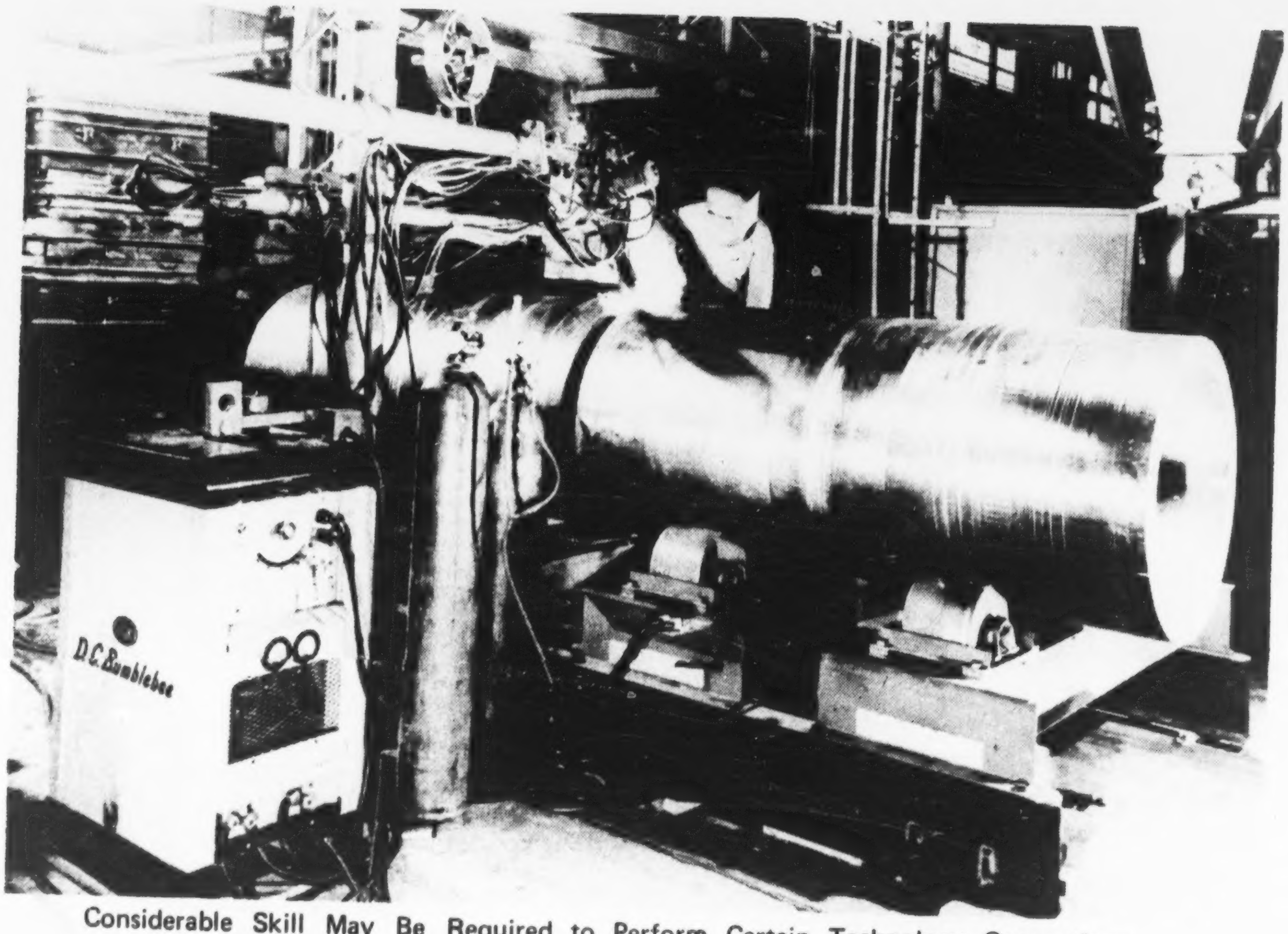
Teletypist—transmits written messages by operating a teletype machine that has a keyboard similar to that of a typewriter.

Terrazzo worker—prepares ornamental concrete floors and patios using concrete, marble chips, metal strips, and other materials; uses a straightedge, trowel, electric-powered grinding machine, and other tools to level the concrete marble chips and metal strips, and to polish the surface after it hardens.

Towerman, railroad—operates the controls which throw railroad track switches, and sets signals to route traffic according to train schedules or special routes.

Turbine operator—observes pressure gages, thermometers, and other instruments on steam- or water-powered turbines which drive generators that produce electric power; records information shown by these instruments, shuts down and starts the equipment as directed by the switchboard operator.

Welder—joins metals by applying heat to melt the edges of the metals and cause them to fuse; uses arc, gas, resistance, and combination welding machines to do the work.



Considerable Skill May Be Required to Perform Certain Technology Occupations. (Courtesy American Welding Society, New York.)

Level 6

Arc cutter—uses an electric arc to trim or cut metals to desired specifications.

Bulldozer operator—operates a tractor that has a blade across the front to move dirt and to push trees and rocks from an area.

Frameman—connects wires from telephone lines and cables to distributing frames in telephone company central offices, using soldering iron and other hand tools.

Groundman—helps in the erection of utility poles and the installation and repair of overhead power lines and communication lines.

Hod carrier—supplies the bricklayer, plasterer, or stonemason with bricks, concrete, mortar, or plaster.

Machine tool operator—works with milling machines, lathes, grinders, drill presses, and screw machines to shape metals to precise dimensions; places metal stock in the machine; checks machine for proper functioning, and uses special gages to measure stock.

Meter reader, electric—checks and records the readings on the meter dials to determine how much electricity has been consumed for a certain period of time so that the customer may be charged for the amount used; reports improperly operating meters to the meterman.

Painter—prepares the surfaces of buildings and other structures, and applies paint, varnish, enamel, and lacquer to these surfaces; mixes paints, matches colors, and erects scaffolding; uses spray guns, brushes, and rollers to apply the paint.

Painter, production—uses a spray gun to apply coats of paint or other protective material such as enamel, lacquer, and stain; cleans surfaces, mixes paint, and loads and adjusts the spray gun.

Power shovel operator—operates a power-driven machine having a movable shovel that lifts and dumps dirt, rock, sand, and other materials.

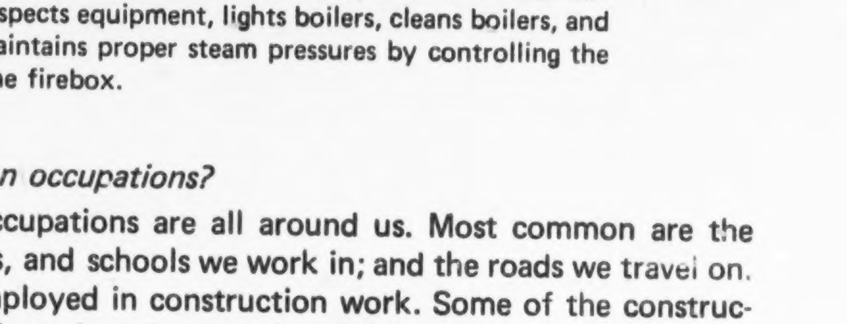
Reinforcing iron worker—sets steel bars in concrete forms to reinforce concrete structures by arranging and tying the bars so that each bar receives its intended load; uses steel pliers and other tools to wire the rods in place.

Stationary fireman—operates and maintains steam boilers used to power industrial machinery, and to heat factories; inspects equipment, lights boilers, cleans boilers, and oils and greases moving parts; maintains proper steam pressures by controlling the flow of air, gas, oil, or coal to the firebox.

2. *What is the nature of construction occupations?*

The products of construction occupations are all around us. Most common are the homes we live in; the factories, offices, and schools we work in; and the roads we travel on. More than four million people are employed in construction work. Some of the construction occupations with the largest number of workers are listed below:

Asbestos insulation worker
Bricklayer (mason)
Bulldozer operator
Carpenter
Cement mason
Civil engineer
Draftsman
Elevator constructor
Floor covering installer
Glazier
Hod carrier
Lather
Marble setter
Ornamental iron worker
Painter
Paper hanger
Plasterer
Plumber and pipe fitter
Power shovel operator
Reinforcing iron worker
Roofer
Structural iron worker
Terrazzo worker



Most construction work requires physical activity. It has been called a "man's type of work." However, women have recently started to work in some of these occupations. Working conditions may be hot in the summer months and cold during the winter months. Many opportunities for creativity are provided. Some workers may move about—sometimes many miles to new jobs. Many construction workers are self-employed and do only local work.

Students planning to enter one of these occupations should take courses in mathematics and science. Courses in woodworking and mechanical drawing are also helpful. Many construction workers enter the field through apprentice training. Others enter the field as laborers, or helpers and learn the trade by working with experienced craftsmen. Still others attend vocational schools to learn the trade. It may take several years to learn the skills necessary to be a carpenter, bricklayer, marble setter, or other construction worker.

A construction trade craftsman may advance to be a job foreman, an estimator, job superintendent, or salesman for a building supply company. Some even form their own construction companies and contract jobs. However, the contract construction field is very competitive.

The employment outlook for construction workers is very promising. New highways and bridges are being constructed at an increasing rate. Many new homes and apartment buildings are being built, particularly in the suburbs near large cities. Buildings for schools, businesses, and industries will be needed. Such structures will create many job openings. The demand for young workers is great. This is because few young people are entering the construction occupations. This has created a shortage of laborers and skilled workers.

3. *What is the nature of aviation occupations?*

Aviation occupations are concerned with air transportation. There are two main kinds of aviation occupations: Those concerned with military activity and those concerned with civilian, or non-military, transportation. Examples of civil aviation occupations include:

Aerospace engineer
Aircraft mechanic
Airline dispatcher
Air traffic controller
Engineering technician
Flight engineer
Ground radio operator
Pilot
Teletypist

The airline industry is very important today. People are becoming increasingly mobile, and are relying upon quick, safe, and comfortable air travel. Air freight has become increasingly important for the quick delivery of manufactured goods. About 375,000 people are employed in civil aviation occupations. Of these more than 200,000 are employed by scheduled airlines. Most work is in and around cities.

A high school education is essential for most aviation occupations. In fact, many of these occupations require a college degree. Aerospace engineers have four years of college, and some do graduate work. Each airline has its own requirements for personnel. Many times the airline sponsors its own training school.

History, social studies, economics, and other high school subjects which contribute to a good general education are beneficial to persons interested in work in civil aviation.

The future of civil aviation is bright. It is estimated that more than 180,000 general aviation aircraft will be flying by 1980. This can be compared with approximately 100,000 in 1970.

4. *What is the nature of electric power occupations?*

Nearly every American home, business, and community is dependent upon electricity. Electric power is required for communication systems, mechanized industries, and home appliances. Nearly one million people are employed in producing electricity at generating plants and in distributing electricity at substations and electric utility companies. Some electric power occupations are:

- Boiler operator, electric power
- Cable splicer
- Electrical engineer
- Electrician, construction
- Electrician, maintenance
- Engineer technician, electrical
- Groundman
- Lineman, electric power
- Meterman, electric power
- Meter reader, electric power
- Powerplant equipment operator
- Power switchboard operator
- Substation operator
- Troubleman, electric power
- Turbine operator, electric power
- Watch engineer, electric power

Meter Reader at Work. (Courtesy Mississippi Power and Light Company, Jackson, Mississippi.)

Beginning power plant workers may be required to do clean-up jobs or work as helpers in order to become familiar with the equipment and operation of a power plant. They may advance to more responsible jobs as openings occur and as they master skills. For example, it takes from one to three years to become an auxiliary equipment operator (auxiliary equipment includes fans, blowers, condensers, compressors, and water conditioners in a power plant), and four to eight years to become a boiler operator or turbine operator. Applicants are generally required to have a high school education or its equivalent. Formal apprenticeships in these jobs are rare. Workers employed in atomic-powered electric plants must have special training to work with radioactive fuel.

Most electric transmission and distribution workers begin as helpers. Advancement to the more skilled jobs may take three to seven years. Skilled linemen usually have about four years of on-the-job training. In some companies, this training is available through formal apprenticeship programs. Applicants for line work should be strong and in good physical condition. Linemen climb poles and work high above the ground. Many times live wires may surround them. They work during hot, cold, and wet weather conditions. Emergency conditions caused by high wind and storms may require extra hours of work. Linemen may be required to lift heavy wires and equipment.

Metermen and meter readers begin their jobs as helpers in the meter repair shops. About four years of on-the-job training is necessary to become a fully qualified meterman.

Most electrical engineers, electrical engineer technicians, and maintenance electricians are employed in industries other than electric-power industries. About five years of college are required for electrical engineers. Construction electricians and maintenance electricians may receive training in vocational programs in high school or junior college. However, many begin work as helpers and receive their training on the job.

High school students interested in pursuing a career in the electric-power industry would do well to take mathematics, physics, chemistry, and related vocational classes.

5. *What is the nature of telephone occupations?*

The telephone occupations included here are concerned with the construction, installation, and maintenance of telephone equipment. The occupations involving the office aspects of telephone operation are in the Organization Group. Some of the occupations discussed here include cable splicer, lineman, telephone and PBX installer and repairman, and frameman.

Nearly 400 million local and long distance telephone calls are made daily in the United States. More than 100 million telephones are in use. This demands a tremendous network of telephone lines and cables to supply the service. Those who work in the construction, installation, and maintenance of telephone lines and equipment are vital to the telephone industry.

Telephone jobs may be found in almost every community. However, most are in large cities with many industrial and business establishments. One large telephone operation, The Bell System, serves about five out of every six of the nation's telephones. The remainder are served by smaller independent companies.

Applicants for jobs in the telephone industry must have at least a high school education. Many times applicants must have two years of study at a junior college. Applicants for jobs as linemen and cable splicers should be physically qualified for such work. (Their work is similar to electric-power linemen.) Manual dexterity and the ability to distinguish color are also important qualifications. Telephone companies generally do not require previous experience or training for these jobs. On-the-job training after employment is very important.

Employment opportunities for cable splicers and linemen may be somewhat limited. The same will be true for PBX installers, repairmen, and framemen.

High school students desiring to work in these occupations would do well to take courses in mathematics and physics. Basic electricity and electronics would also be helpful in preparing to enter a telephone occupation.

6. *What is the nature of machine operation occupations?*

Machine operation occupations are primarily concerned with machines that work with metal. Almost every product made by American industry contains metal parts, or is made by machines made of metal parts. About 500 different types of machine tools are currently in use. More than one million people are employed in the machine industry. Machining workers (those who use machine tools to shape metals) make up the largest occupational Group in the metal-working trades. About four-fifths of all machining workers are employed in the metal-working industries. Many work in nonmetal-working industries such as railroad shops and maintenance shops of factories that make textiles, paper, glass, and chemicals.

Examples of machine occupations are listed on page 101.

MEN
WORKING

Linemen at Work. (Courtesy Mississippi Power and Light Company, Jackson, Mississippi.)

Arc cutter
Industrial engineer (also found in other industries)
Inspector
Instrument maker
Layout man
Machine tool operator
Machinist
Mechanical engineer
Millwright
Oxygen cutter
Set-up man
Sheet metal worker
Tool and die maker
Tool designer
Welder

Many of the workers in machine and machinery occupations are identified with the machines they operate. People who work in these occupations work in a mechanized environment. They may be required to work with the same equipment for long periods of time. Other workers may be involved in a series of machine operations. For example, the machinist may work with several different types of machine tools and be required to perform several jobs on each.

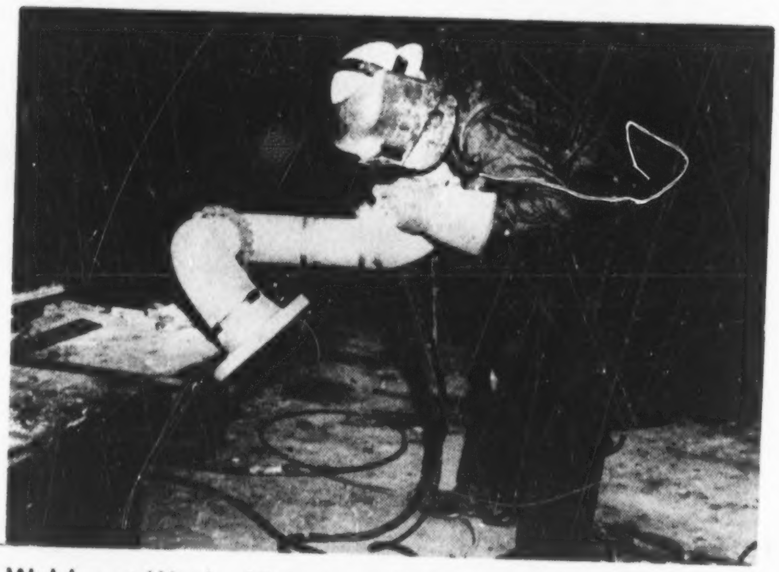
Workers such as millwrights, layout men, tool designers, and inspectors deal with complicated work specifications.

Persons who desire to enter machine and machining occupations should have an interest in watching machines in operation. They should have an interest in how machines function and produce goods.

Industrial engineering and mechanical engineering require about five years of college leading to a bachelor's degree. Engineers may receive on-the-job training before actually assuming major responsibilities. Arc cutters, oxygen cutters, machine tool operators, and inspectors usually learn the trade through experience under the supervision of craftsmen. Tool and die makers, instrument makers, machinists, millwrights, and set-up men may receive their experience and training through an apprenticeship program. Layout men may be required to complete an apprenticeship program as machinists and have several years of experience to develop the necessary skills for this occupation. Persons interested in machine or machinery occupations should have good mechanical aptitude and a liking for machinery.

Mathematics and science courses would help prepare one for these occupations. Metal trades, welding, and machine shop courses will help prepare students for entrance into work as sheet metal workers, oxygen cutters, arc cutters, welding machine operators, and machine tool operators.

Employment opportunities may be limited in some machine or machinery occupations because of technological developments in machine tools and machinery. Automated machining lines in which machine tools are linked together are being used. Numerically (computer) controlled machine tools are being increasingly used. Such automated equipment will replace some machine operators, but there will be a need for trained personnel to operate this equipment.



A Welder at Work. (Courtesy American Welding Society, New York.)

7. *What is the nature of mechanics occupations?*

Mechanics and repairmen keep automobiles, ship engines, watches, television sets, typewriters, washing machines, airplanes, and industrial machinery in operating condition. These workers represent one of the fastest growing occupational Groups. Most are highly skilled workers who have spent several years learning the trade. Many of these occupations are concerned with the same machinery as the machine operations occupations. Examples of mechanics and repairmen occupations are listed below.

Aircraft mechanic
Appliance serviceman
Auto body and fender repairman
Automobile mechanic
Business machine repairman
Diesel engine mechanic
Instrument repairman
Maintenance electrician
Millwright
Refrigeration, air conditioning,
    and heating mechanic
Ship engine occupations
Stationary engineer
Stationary fireman
Watch repairman

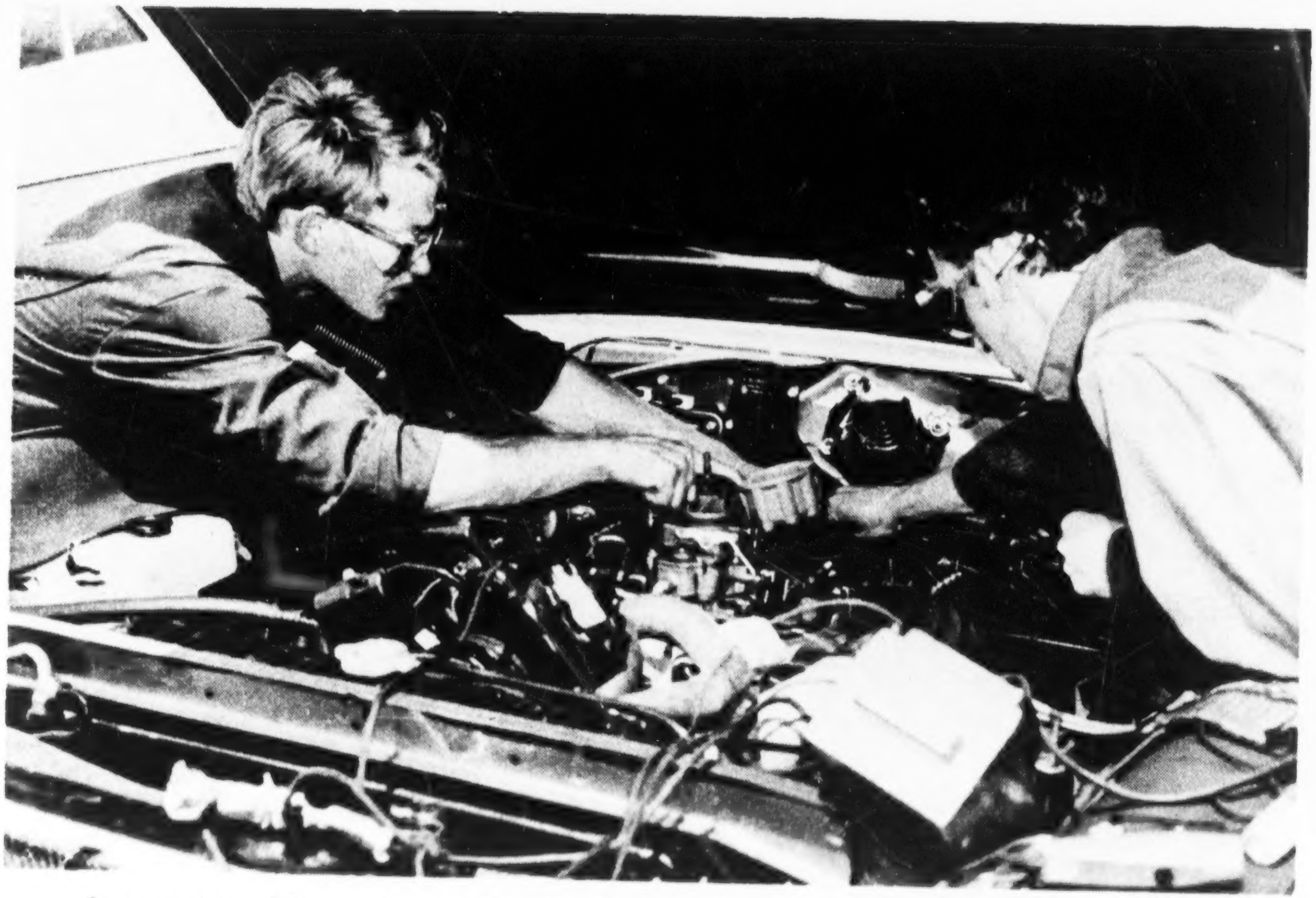
There are more than three million mechanics and repairmen in the United States. Almost one-third of these (785,000) are automotive mechanics, such as car, truck, and bus mechanics, or automobile body and fender repairmen. More than 100,000 are employed as appliance servicemen, industrial machinery repairmen, television and radio repairmen, and aircraft mechanics. About 650,000 workers are employed as maintenance electricians, millwrights, watch repairmen, stationary engineers, and stationary firemen.

Most mechanics and repairmen are highly skilled workers. A high school education is often required for employment as mechanics and repairmen. Good mechanical aptitude and manual dexterity are essential for satisfaction and success in these occupations. Watch repairmen need patience, finger dexterity and good vision. Millwrights need to be strong and agile.

Many mechanics and repairmen learn their skills in vocational and technical programs in high schools and junior colleges. Others learn their skills on the job, or through apprenticeship programs.

High school students contemplating entering one of these occupations should consider taking classes in mathematics, chemistry, and physics. Many high schools offer automobile mechanics, auto body and fender mechanics, diesel engine mechanics, machine shop, and other vocational courses. The public junior colleges offer courses in refrigeration, air conditioning, and heating; business machine repair; aircraft mechanics; maintenance electricity (industrial electricity); watch repair; radio and television repair; and other areas.

The employment of automobile mechanics, aircraft mechanics, diesel mechanics, radio and television repairmen will increase rapidly in the next ten years. Employment as ship engine workers, auto body and fender repairmen, millwrights, maintenance electricians, and watch repairmen will not increase as rapidly. However, there will be a variety of career opportunities open to young people who are mechanically inclined and are willing to invest a few years in learning the skills of a trade.



Automobile Mechanics at Work. (Courtesy Milt Lawrence, Jackson, Mississippi.)

8. What is the nature of printing occupations?

The American people depend heavily upon printed materials as a medium of communication. Many rely upon newspapers for keeping up with world affairs. Textbooks and other printed materials are used in school. Much work goes into the writing, editing, printing, and duplication of printed matter. Several printing and related occupations are listed below.

- Bookbinder
- Cameraman
- Compositor
- Electrotyper
- Linotype operator
- Make-up man
- Monotype operator
- Phototypesetter
- Platemaker
- Pressman
- Printer pressman
- Proofreader
- Stereotyper
- Stonehand
- Stripper
- Technical writer

The printing industry is one of the largest service industries in our nation. Approximately one million people are employed as cameramen, printing equipment operators, proofreaders, and in other printing and related occupations. Most towns of any size have some kind of printing business. New technological developments have enabled the industry to print better materials and provide more colorful illustrations. New skills are required in this respect.

Apprenticeship is the most common way of entering these occupations. However, technical writers usually are required to have a bachelor's degree in English, journalism, engineering, or science. A thorough knowledge of spelling, punctuation, the fundamentals of grammar, and basic mathematics is essential in many of the printing occupations. Some knowledge of chemistry, electronics, and physics is becoming increasingly important.

Students who are planning to enter printing occupations immediately after high school may prepare by enrolling in a vocational offset printing course. Another way to learn about printing is to work in a print shop in a cooperative education class.

Employment of lithographic (offset printing) craftsmen is expected to grow. However, the employment of linotype operators, hand compositors, photo-typesetting operators, and bookbinders will probably decrease because of rapid developments in printing processes and equipment and the increasing use of other printing methods. Employment opportunities for electrotypers and stereotypers may also be limited.

9. What is the nature of railroad occupations?

The importance of railroads has declined in recent years. This does not mean, however, that workers cannot have rewarding careers in railroad occupations. Examples of railroad occupations include the following:

Brakeman, railroad
Carmen
Conductor, freight
Locomotive engineer
Locomotive fireman
Telephoner—telegrapher
Towerman

The combined rail lines of all railroad companies in the United States make a network of 200,000 miles of lines. Approximately 50,000 towns and cities are served. Close to three-quarter million persons are in railroad occupations. Food, household appliances, lumber, coal, petroleum products, pulpwood, automobiles, aircraft, space equipment, and many other products are transported by rail.

Railroad companies prefer to hire people who have graduated from high school. Most companies train their own workers.

The seniority system is well established with most railroad companies. For example, openings for conductors are filled on a seniority basis by promotion of a qualified brakeman. Immediate opportunities for careers after high school as freight conductors and locomotive engineers are limited. Most new employees in the railroad industry start by working with experienced men and with experience advance to other positions.

10. What is the nature of engineering occupations?

Many of the engineering and related occupations are also listed with other areas of Technology occupations. Engineering is the second largest profession. Only teaching exceeds it in size. Some common engineering occupations are:

Aerospace engineer
Ceramic engineer
Chemical engineer
Civil engineer
Electrical engineer
Industrial engineer
Mechanical engineer
Metallurgical engineer
Mining engineer

There are approximately one million engineers in the United States. About half of these are employed by manufacturing industries producing aircraft, industrial machinery, chemicals, and electrical equipment. Many are employed by federal, state, and local government agencies. More than 30,000 are employed by educational institutions.

People successful in engineering and related occupations usually have high interest in the physical things about them. This is important because they are directly involved in many intellectual, mechanical, and scientific activities. Students who are considering becoming engineers need to take classes in science and mathematics in high school. At least four years of college are required. Many engineers enroll for additional study and take advanced degrees.

Review Questions:

1. What broad occupational areas are included in the Technology Group?
2. What is the nature of the following occupations?
    - Draftsman
    - Bricklayer
    - Carpenter
    - Roofer
    - Baker
3. Why are construction occupations called "a man's type of work"?
4. What is the main distinction between engineering occupations and most other occupations in this Group?

Suggested Activities:

1. Review various occupational information materials. Carefully note all occupations which are in the Technology Group. List occupations other than those given in this publication which you believe are in the Technology Group.

2. Invite someone who is employed in a Technology occupation to visit your class and discuss the nature of his work.

3. Develop a display, bulletin board, or poster depicting occupations in the Technology Group. Obtain pictures from magazines or newspapers which show workers in Technology occupations.

4. Review the want ads of a newspaper. Cut out those in the Technology Group and place them on a poster or bulletin board. Note where the jobs are found, the rate of pay, and requirements for entry.

5. Select one or more occupations in the Technology Group in which you are interested. Determine the following information for each occupation: (Your teacher may have prepared some forms for your use.)

OCCUPATIONAL STUDY OUTLINE

A. *Name of Occupation:*

B. *Duties of the Occupation:*

C. *Qualifications:* What are the personal requirements?

D. *Age:* How old must I be to enter the occupation?

E. *Sex:* Is this an occupation in which others of my sex are normally employed?

F. *Specific Physical and Health Requirements:* Am I the correct height to do the work? Are my eyesight and hearing adequate? Am I strong enough?

G. *Interest:* Do I possess this interest? If not, could I develop interest in this type of work?

H. *Abilities:* Do I possess the required abilities? If not, could I acquire the knowledge and skills necessary to do the job?

I. *Personality:* Do I possess the personal qualities necessary for doing this type of work? If not, could I develop these qualities?

J. *Values and Attitudes:* Does anything about this job violate values and attitudes I have about people and work? If so, could I adjust to situations that required that I change my values and attitudes?

K. *Preparation:* What subjects do I need to study? What special training will I need? How long will it take to receive this training? How much will it cost? Can I get this training within the state? Is work experience required for entry into this occupation? What is the method of entry into this occupation?

L. *Working Conditions on the Job:* Is it hazardous work? Is it noisy or dirty? Will I be working in shifts? Will I work indoors or outdoors? Is it hard work? Does the work require being away from home for long periods of time?

M. *Rewards from Work:* How much is the beginning pay? Is there chance for advancement? Will this work experience help me get a better job? Would I be happy doing this type of work?

N. *Employment Outlook:* How many are employed in the occupation at present? Are there employment opportunities in my community or state for this type of work?

O. *Special Requirements (such as certification, licenses, and examinations):*

6. Review the yellow pages of the local telephone directory. Prepare a list of all businesses which might have Technology occupations.

7. Make a list of all the persons you know who work in Technology occupations. Also indicate their occupation and employer.

8. Form a panel of six students to discuss the importance of Technology occupations in the community, the state, and the nation. Each member of the panel should study these occupations before the panel begins its discussion.

9. Visit the trade and industrial department in your school. Have the teacher explain the facilities found there. (It is suggested that arrangements for the visit be made well ahead of the visit.)

10. Investigate VICA. Determine what it is, what it does, and how it functions.

11. As the class members name the local businesses and firms that employ people in Technology occupations, write them on the chalkboard. Ask if any members of the class know people employed at these places.

12. Perform one or more of the following activities related to construction occupations:
    a. Study carefully the lot and construction of the lot, foundation, floor, walls, ceiling, and roof of your home and school. List the occupations that were represented in the construction of these buildings.

b. Arrange to visit several construction sites to observe workers on the job and to talk with the workers about their work. Write a report of your findings. List the occupations that appeared to be most interesting and the tools used in the work. Also, give reasons why these occupations seem to interest you the most.

c. Acquire a blueprint and specifications for a building. Study the drawings and specifications as they relate to the occupations that interest you.

d. Practice using the tools that are used by workers in construction work (hammer, rules, framing square, paint brushes, hand saw, trowels, levels, screwdrivers, sledge hammer, chalk line, etc.). Obtain tools and materials to make one or more projects that would be useful in the home. Do repair work around your home to get experience in the occupations in which you are interested. The following are some suggested activities: level a tool shed or some other small building; fix a leaking water pipe; mix mortar and build a four-inch brick foundation wall around an existing building; repair the roof on a building; pour a concrete sidewalk slab (prepare the site for pouring); using a brush, apply paint to a wooden surface; remove a broken window pane and install new glass; obtain some asbestos insulation and study its characteristics.

e. View one or more of the following films:

(1) *The Construction Worker.*

Available from:
Modern Talking Pictures Service
214 South Cleveland Street
Memphis, Tennessee 38101

(2) *Careers in the Building Trades.*

Available from:
Coronet Instructional Films
65 East South Water Street
Chicago, Illinois 60601

(3) *Operating Engineers* (bulldozers, cranes, derricks, steamshovels).

Available from:
National Special Media Institutes
Inventory of Resources
Michigan State University
East Lansing, Michigan 48823

(4) *Painting and Decorating.*

Numbers (4) through (9) are available from:
Film Library, Curriculum Coordinating Unit
Drawer DX
State College, Mississippi 39762

(5) *Plumbing.*

(6) *Brick and Stone Mason.*

(7) *The House Builders.*

(8) *Brick Laying.*

(9) *Drafting: Occupations and Opportunities.*

f. Read the following book:
Jobs in Building Construction.

Available from:
Science Research Associates, Inc.
259 East Erie Street
Chicago, Illinois 60611

g. Volunteer to work as a "helper" after school hours or on Saturday at a local construction site. It may be necessary to do clean-up and pick-up work, as many construction occupations are covered by the Child Labor Law and are classified as hazardous. Persons under 14 years of age cannot work in certain jobs.

13. Conduct one or more of the following activities related to civil aviation:
   a. Arrange to visit an airport to make an on-sight observation of the work carried on by civil aviation workers. Plan to talk with someone employed in the specific occupation in which you are interested. Ask to see some of the "paper work" he is required to do. Also, ask the dispatcher or traffic controller for an airline schedule of arrivals and departures.
   b. Arrange to view one of the following films:
      (1) *Aviation--The Career for Marc.*

Available from:

National Institutes Inventory of Resources
Industrial Arts
Michigan State University
East Lansing, Michigan 48823

      (2) *Aviation Mechanic* (FA-315).

Numbers (2) and (3) are available from:

Federal Aviation Administration, Film Library
AC-921, Aeronautical Center
Oklahoma City, Oklahoma 73125

      (3) *Traveler Meets Air Traffic Control.* A (FA-102).
   c. Read the following book:

Neal, Harry E. *Skyblazers: Your Career in Aviation.* (1958).

Available from:

Julian Messner
1 West 39th Street
New York, New York 10018

14. Conduct one or more of the following activities related to electric power and telephone work:
   a. Study carefully the electrical system in your home. Determine the purpose of a transformer used ahead of the wires entering your home, the purpose of a distribution panel, fuses, and circuit breaker in your home; and why the correct amount of electricity is normally present at light sockets and wall outlets. Write a report of your findings.
   b. Obtain a basic electricity book for reference and do the following activities:
      (1) Strip the insulation from a short piece of electrical wire using wire strippers.
      (2) Splice two short pieces of electrical cable using wire cutters, wire strippers, and tape.
      (3) Acquire a construction plan and identify electrical symbols.
      (4) Use a wire gage or micrometer to find gage and diameter for several sizes of wire.
      (5) Write a two page report briefly explaining electromagnetism (the magnetic effects of a conductor carrying a current.)
      (6) Study Ohm's Law and work several problems using Ohm's Law. Get the assistance of the mathematics or science teacher if you cannot work these problems.
      (7) Observe the watt hour meter that registers the consumption of electricity in your home. You will notice that it measures electricity in kilowatt hours. Identify the correct reading on the meter. Determine the basic operation of the meter.
      (8) Ask the science teacher to show you how electric current, voltage, and resistance are measured by an electric meter.
      (9) Take an old lamp socket and extension cord and attach the lamp socket to the extension cord, making it safe for use as a source of light. Use the following procedure:
         (a) Disassemble the socket into its individual parts.
         (b) Strip the insulation from the end of the extension wire using wire strippers. Insert the wire through the base and cap lining of the socket.
         (c) Tie an underwriter's knot in the wire.
         (d) Fasten one end of each wire onto a terminal on the base of the lamp socket.
         (e) Assemble. The shell should fit inside the case and snap into position.

c. Plan to observe a lineman, cable splicer, or groundman (telephone or electric power) working with utility lines in your town or in the country. Write a report describing his work and the equipment, tools and supplies used in the work.

Plan to view one or more of the following films:

(1) *The Electrical Worker.*

Both (1) and (2) are available from:

Modern Talking Picture Service
214 South Cleveland Street
Memphis, Tennessee 38104

(2) *The Telephone Man.*

15. The activities listed below relate to machining and machinery occupations. Do one or more of those which interest you the most.

a. Obtain several working drawings of machines, metal parts, and other objects. Borrow a mechanical drawing book from the mechanical drawing instructor, or check one out of the school library. Study the illustrations in the book. Use the book to determine the importance of a working drawing, and to determine what certain kinds of lines, signs, and abbreviations mean.

b. Go to the machine shop or agriculture shop and ask permission to tour the area. Look closely for the types of hand tools, measuring devices, and machine tools used in metal work. Hand tools used in metal work include machinists hammers, scribes, punches, files, pliers, wrenches, hack saws, drill presses, milling machines, lathes, grinders, etc. Determine the purpose and use of each of these items in machine and machining work. You may gather this information by observing someone using the tools and equipment in a shop, or by reading a metal work or machine shop textbook.

c. Do several of the following activities in the school shop. (If necessary, refer to a metal work or machine shop textbook.)

(1) Measure the length of a short piece of metal stock with a steel tape or rule.
(2) Measure the thickness of a thin piece of scrap metal with an outside micrometer.
(3) Cut a piece of scrap tin along a straight line using tin snips.
(4) Use hand wrenches to loosen and tighten bolts and nuts holding parts together.
(5) Attach a welding torch or a cutting torch to a regulator, using a dual-type hose. Get your instructor, or the shop instructor, to help prepare the welding machine for operation. Then try running a fusion bead using two pieces of scrap metal.
(6) Drill a hole through a flat piece of metal with a drill press. Use a vise to hold the metal stock firm.
(7) Use a file to cut rough edges from a piece of metal. Hold the metal in a vise.
(8) Bend a piece of sheet metal and thin metal stock into some desired shape.
(9) Do straight turning on a metal lathe.

d. Plan to see one or more of the following films:

(1) *Precision Tool Making and Machining.*

Available from:
Modern Talking Picture Service
214 South Cleveland Street
Memphis, Tennessee 38101

(2) *Jobs in Mechanical Work.* Job Family Series No. 2.

Available from:
Science Research Associates, Inc.
259 East Erie Street
Chicago, Illinois 60611

(3) *Knowledge and Skills* (story of Trade and Industrial Education).

Available from:
Association Films, Inc.
2221 Faulkner Road, Northeast
Atlanta, Georgia 30321

(4) *Futures in Welding.* S.C.A. 1963, 20 min., color.
Available from:
National Special Media Institutes
Inventory of Resources
Michigan State University
East Lansing, Michigan 48823

(5) *Machinist: You Always Do the Best Job You Can.*
Available from:
Film Library, Curriculum Coordinating Unit
Drawer DX
State College, Mississippi 39762

e. Recording:
Mechanical Interest Occupations. Side 4. Record Series: "Exploring the World of Work."
Available from:
Wilson Corporation
555 West 166th Street
South Holland, Illinois 60473

f. Read one or more of the following publications:

(1) *Opportunities in the Machine Shop Trades.*
Available from:
Vocational Guidance Manuals
235 East Forty-fifth Street
New York, New York 10017

(2) Berg, Thomas, *Aim For a Job in Welding.*
Available from:
Richards Rosen Press, Inc.
29 East 21st Street
New York, New York 10010

(3) *Careers in Automation.* 1968 edition.
Available from:
Hawthorn Books, Inc.
70 Fifth Avenue
New York, New York 10011

16. Conduct one or more of the following activities which relate to mechanics and repairman occupations:

a. Purchase a radio kit (AM and FM). These kits can be ordered complete with step-by-step instructions from various companies. Assembling the kit should give you some idea of the work of a radio-TV repairman.

b. Change the oil and clean the air filter on your lawnmower engine. Your mower probably has instructions explaining the procedure.

c. Acquire a power mechanics book and do several of the following activities:

(1) Write a report on the history of power.

(2) Study your automobile and identify the fuel system, electrical system, cooling system, power train, suspension system, steering system, and braking system. In a written report, briefly explain the function of each.

(3) Write a report in which you briefly explain the difference between a diesel engine and your automobile engine. Also, relate the importance of diesel engines in transportation.

(4) Write a report on the tools and equipment used by power mechanics in service and repair work.

(5) In a written report, explain the types of aircraft engines, and the types of engines and propulsion systems used in space flights.

d. Obtain a basic electricity book and do the following activities:

(1) In a written report, explain the use of electricity in an air conditioning system, refrigerator, electric range, electric hot water heater, and electric iron.

(2) Write a report in which you briefly explain the meaning of positive and negative charges of electricity, electromagnetism, Ohm's Law, electrons, atoms, electronics, and circuits.

(3) Prepare a list of hand tools used in electrical work.

e. Plan to see one or more of the following films:

(1) *The Electrical Worker.*

Films (1) through (3) are available from:
Modern Talking Picture Service
214 South Cleveland Street
Memphis, Tennessee 38101

(2) *The Motor Mechanic.*

(3) *The Electronic Technician.*

(4) *Your Future in Electronics.* 21 min.

Available from:
Mr. C. E. Thomson, Registrar
RCA Institute, Inc.
350 West 4th Street
New York, 14, New York

f. Read one of the following books:

(1) Neal, Harry E. *Your Career in Electronics.*

Books (1) and (2) are available from:
Julian Messner
1 West 39th Street
New York, New York 10018

(2) Gordon, George and Falk, Irving A. *Your Career in Television and Radio.*

(3) Daly, Donald F. *Aim For a Job in Air Conditioning and Refrigeration.*

Books (3) through (6) are available from:
Richards Rosen Press, Inc.
29 East 21st Street
New York, New York 10010

(4) Taylor, Dawson, and Bradley, James. *Aim for a Job in Automotive Service.*

(5) Lipton, Benjamin J. *Aim for a Job in Watchmaking.*

(6) Taylor, Dawson. *Your Future in the Automotive Industry.*

17. Perform at least one of the following activities which pertain to printing and related occupations:

a. Tour a newspaper office or some other printing shop. Make notes about the types of equipment used, and the function of each. Prepare a report about the field trip and present it to the class.

b. Obtain and study a list of proofreader's marks. The business teacher can help provide resource material such as a typewriting book. Such books will have proofreader's marks for study. Get a typewritten page and proof the copy, using the proofreader's marks to indicate mistakes.

c. Clip several small articles and pictures from a newspaper. Lay out and paste the pictures and articles on a standard sheet of notebook paper, making maximum use of the space available.

d. Plan to see the following film:

What Greater Challenge (newspaper industry). 10 min.

Available from:
Copley Productions
434 Downer Place
Aurora, Illinois 60606

e. Read one or more of the following publications:

  (1) Fujita, Neil. *Aim for a Job in Graphic Design/Art.*

  Books (1) and (2) are available from:

  Richards Rosen Press, Inc.
  29 East 21st Street
  New York, New York 10010

  (2) Reinfield, George, Jr. *Your Future in Printing.*

  (3) Gould, Jay. *Opportunities in Technical Writing.* 1964 ed.

  Available from:
  Vocational Guidance Manuals
  235 East Forty-fifth Street
  New York, New York 10017

18. Conduct one or more of the following activities about railroad occupations:

  a. Study available information and write a report on the advantages and disadvantages of working for a railroad.

  b. Plan to spend some time after school hours observing the activities of persons working at a railroad station and with trains. Interview the telephoner–telegrapher, or fireman. Locate and interview a conductor, carman, or engineer while he is off-duty. Also pick up a train schedule at the station. Study the schedule to determine departure locations and hours.

  c. Study available information and write a report on the history of the railroads, the jobs that were created, and the changes in jobs that have recently been created as a result of new technological developments.

  d. Read the following book:

  Liston, Robert. *Your Career in Transportation.* 1966 ed.

  Available from:
  Julian Messner
  1 West 39th Street
  New York, New York 10018

19. The activities listed below pertain to various engineering occupations. Conduct one or more of the following:

  a. Read one of the following books:

  (1) Boyd, Waldo T. *Your Career in the Aerospace Industry.*

  Books (1) and (2) are available from:

  Julian Messner
  1 West 39th Street
  New York, New York 10018

  (2) Neal, Harry E. *Engineers Unlimited.* 1968.

  (3) Shackleton, Paul S. *Opportunities in Electrical and Electronic Engineering.*

  Books (3) through (5) are available from:

  Vocational Guidance Manuals
  235 E. Forty-fifth Street
  New York, New York 10017

  (4) Scholes, Samuel Ray. *Opportunities in Ceramic Engineering.*

  (5) Stone, Archie A. *Opportunities in Agricultural Engineering.*

  b. Arrange to see one of the following films:

  (1) *Engineer: Man of Destiny.*

  Films (1) and (2) are available from:

  National Special Media Institute
  Inventory of Resources
  Michigan State University
  East Lansing, Michigan 48823

(2) *Careers in Engineering.*

c. Aerospace Engineer, Engineer Technician

(1) Use your imagination to design a new type of aircraft or spacecraft. Draw a picture of the craft on paper and make a model with metal or wood. Write a report explaining the structure, instruments to be used, propulsion system, materials that would be used to build the craft, how it would be manufactured, and how it would be tested.

(2) Acquire an engineering materials book from the school library or the science department. Include the following information in a four-page report: definition of nonferrous metals and alloys, desirable qualities of nonferrous metals and alloys, uses of nonferrous metals and alloys in the aircraft and space industry (particularly aluminum and aluminum alloys, titanium and titanium alloys), and the mechanical and physical properties of aluminum and titanium.

(3) Arrange to interview an aerospace engineer at an aircraft and parts industry, at a commercial airline terminal, or at a college or university that has an aerospace engineering department.

(4) Write the following source for additional information:

American Institute of Aeronautics and Astronautics, Inc.
2 East 64th Street
New York, New York 10021

d. Agricultural Engineer

(1) Use your imagination to design a new type of farm equipment, machinery, or structure. Draw a picture of the design on paper, or make a model from wood or metal. Write a report explaining the use of the item, how it varies from other similar items, materials necessary to manufacture the item, how it would be manufactured, and what testing, if any, will need to be done before it will be put to practical use.

(2) Develop basic plans for building a dairy barn, using the most modern equipment and work area arrangements. Consult your teacher about using part of the plan in practical application on your farm, or someone else's farm.

e. Chemical Engineer, Ceramic Engineer

(1) Talk with the chemistry teacher or other science teachers about doing the following activities in the science laboratory.

(a) Set up apparatus and test several materials (ores, minerals, gases, etc.) for the presence of elements and substances.

(b) Write a two-page report about common hazards in a chemistry laboratory. Include a plan to minimize such hazards, including equipment and apparatus alterations.

(2) Ask the science teacher to explain what high school courses are essential for those seeking careers in chemical engineering or ceramic engineering. Ask the science teacher to explain the nature of the work done by technicians in these two fields.

f. Civil Engineer

(1) Visit a local water and waste water treatment plant to observe technicians and engineers on the job. This may be done in the field or in a laboratory. Include several aspects of your findings in a report, such as how water is tested for purity, how water is purified, and methods used to analyze waste water (sewage). Summarize how the city water (for household use) is stored and made available to the consumer (distribution design).

(2) Acquire a mechanical drawing book that has a chapter on topographical drawing. (Consult your mechanical drawing or drafting instructor.) Study the symbols for works of man, elevations and depressions, and vegetation. Develop a topographical drawing of your school and the immediate property and roads surrounding the building.

g. Mechanical Engineer

(1) Consult your mechanical drawing instructor or drafting instructor to do the following activities: Acquire a mechanical drawing book. Study the various drafting instruments, materials, and equipment used in drawing. Obtain a set of drafting instruments and try your hand at some geometric constructions involving straight lines, angles, arcs, tangents, and ellipses. Finally, sketch a simple-complex object in orthographic projection (three views).

(2) Study a jig or fixture, or a die that is used in the machine shop. Try your hand at redesigning the object for greater ease and economy in manufacturing. Make sketches with all necessary dimensions.

(3) Study the heating system in your home. Include the following facts in a written report: energy source (gas, electricity, etc.); mechanical components (motors, compressors, blowers, etc.); controls (thermostatic, pneumatic, etc.); and the heating and cooling capacity of the unit(s) in BTU. (Explain the function of each component and the controls.)

(4) Study the engine of your automobile. In a written report, list the major components of the automobile. Tell briefly what each component does and how it works.

h. Mining Engineer

(1) Use a library resource book to write a report on the following:
   (a) Types of minerals that are mined.
   (b) How minerals differ from natural resources (forests, water, etc.).
   (c) How minerals are mined, including constructing the facilities (mining engineer role), and the equipment and tools used.
   (d) Types of mines.

(2) Make a study of your county to see if any mining is being conducted. Typical minerals that are mined in the South are phosphate used in fertilizers; limestone used in cement, lime, and iron; shale, sand, and gravel; iron ores; and coal. Visit a mining site to see the operation.

(3) Find out the value of various minerals. Determine the methods and equipment used to detect and locate minerals. Talk with a geologist, geophysicist, geochemist, or mining engineer about their roles in mining. Find out how much of a particular mineral must be present to make it economically feasible to begin mining operations.

XI. Exploring Outdoor Occupations

Many young people like Outdoor occupations. This is because most of them enjoy being outside in fresh air and sunshine. Outdoor occupations, however, are more than just enjoying the beauty of nature. Many of these occupations demand considerable physical activity. Others are not really outside jobs. Before you make a decision about Outdoor occupations, you should review the occupations included.

The following questions will be answered in this unit:

1. **What occupations are in the Outdoor Group?**
2. **What is the nature of the work in Outdoor occupations?**
3. **How important are Outdoor occupations?**
4. **What education or training is desirable for success in Outdoor occupations?**
5. **What are the earnings and fringe benefits of Outdoor occupations?**
6. **What is the employment outlook for Outdoor occupations?**

1. What occupations are in the Outdoor Group?

Outdoor occupations usually involve working outside a building. Some of the work, however, is not outside. Occupations in agriculture, mining, oil exploration, and related areas are included. Some of the occupations in this Group are listed below:

Level 1

No occupations are listed.

Level 2

Chief surveyor—head of survey party who is responsible for the accuracy of survey work.

Geodetic surveyor—measures large land sea, or space areas, taking into consideration the curvature of the earth and geophysical conditions.

Hydrograph surveyor—makes surveys of harbors, rivers, and other bodies of water.

Landscape architect—plans and designs the landscape layout for parks, lawns, industries, schools, homes and highways.

Petroleum engineer—supervises the overall planning and drilling of oil wells.

Photogram surveyor—applies mathematical techniques to photographs of the earth's surface to measure natural and man-made features of an area.

Range manager—conducts research into problems concerning the production of forage for livestock.

Topographic surveyor—conducts surveys to determine elevations, depressions, and contours of the earth.

Level 3

Computer, seismograph crew—analyzes the statistics obtained from seismograph exploration, such as computing how deep a strata of rock is located beneath the surface of the earth.

Farmer—conducts activities necessary to produce plants or animals. (There are many kinds of farmers: cotton farmer, berry farmer, livestock farmer, fish farmer, and the like. Farmers may be found in most all Levels, depending upon the size and productivity of their farms.)

Fish culturist—supervises and coordinates the activities of workers engaged in growing fish.

Forester—manages and develops forest lands.

Highway supervisor—establishes points, grades, and lines needed in the construction of highways.

Land surveyor—locates and plots boundaries of land.

Petroleum scout—determines facts and informs the company which has employed him regarding oil exploration, leasing, drilling, and production in an assigned area.

Level 4

Cable-tool driller—controls the operations of an oil drilling rig and keeps accurate records of the drilling activity.

Chainman—measures the distances between points using a surveyor's chain or tape.

Forestry technician—assists foresters in managing and caring for forest lands.

Instrument man—sets up and adjusts survey equipment.

Miner—mines ore, coal, or rock. Uses a variety of blasting, cutting, and shoveling equipment.

Ore grader—coordinates the loading, grading, and blending of coal or ore.

Petroleum cementer—operates machine which mixes and pumps cement into the space between steel casings and side walls of oil wells to prevent cave-ins.

Petroleum draftsman—drafts plans for laying out oil fields, refineries, and pipe-line systems.

Petroleum gager—keeps records of the amount of oil flowing into tanks or through pipes.

Plane table operator—prepares and revises maps based on the data gathered by means of plane table and alidade.

Seismograph crew observer—maintains and operates seismograph equipment.

Shaftman—inspects, repairs, and replaces mine shaft parts.

Shooter—places and detonates explosive devices used in seismograph exploration.

Level 5

Acidizer—forces acid into the bottom of an oil well to increase the flow of oil.

Cable-tool dresser—assists an oil well driller and maintains the drilling equipment.

Derrickman—works on a small platform high upon an oil drilling rig.

Engineman—operates motors and engines which supply power to operate an oil drilling rig.

Fisherman—hunts, catches, or traps water animals (includes shellfish).

Perforator operator—places and detonates explosives in drill pipes, casings, and tubing to make passages through which oil can flow.

Prospecting driller—operates portable drilling rigs used in seismograph operations.

Pumper—maintains and operates pumps used in moving oil.

Rodman—carries and reads the rod used in surveying elevations, distances, and directions.

Rotary driller—operates oil well drilling machine which controls pressure and speed of drill, and is in charge of drilling crew.

Sample-taker operator—obtains samples of silt and rock to help geologists determine if oil is present.

Treater—analyzes crude oil for the presence of water and sediment.

Level 6

Fireman—works at oil rigs which use steam for power.

Prospecting drill helper—assists prospecting drillers.

Pumper helper—assists pumpers in maintaining and operating pumps and motors.

Rig builder—installs drilling rigs.

Roughneck—assists rotary floormen who guide the lower end of pipe to and from the well opening, and connects and disconnects drill bits and pipe joints on an oil rig.

Roustabout—performs odd jobs as a general oil field laborer.

Well puller—removes pipes and casings from oil wells for cleaning, repairing, or salvaging.

2. *What is the nature of the work in Outdoor occupations?*

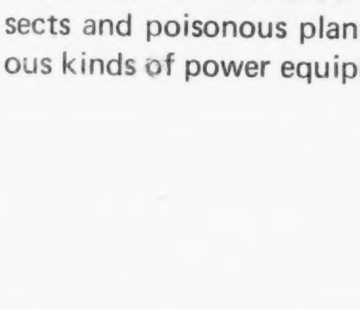
The chief characteristic which distinguishes the occupations in this Group from those in the other Groups is that most of the work is done outdoors. That is, only a small portion of the working hours are usually spent inside buildings.

Production agriculture occupations, commonly known as farming and ranching, are primarily outdoor jobs. The persons employed in such occupations are usually concerned with the growth of either plants or animals, or both. The work may consist of operating large tractors, or rounding up a herd of cattle for vaccination.

Farming has become a scientific venture in which considerable knowledge of mechanics, chemicals, and biology is necessary. Laborious hand work has largely been replaced by machines. The conditions of work may be hot and dusty, or cold and snowy. Animals must be cared for even in the most undesirable weather. The hours of work may be long, but are not nearly as long as they were a few years ago. Persons employed in outdoor production agriculture occupations enjoy many of the same comforts as persons employed in other occupations.

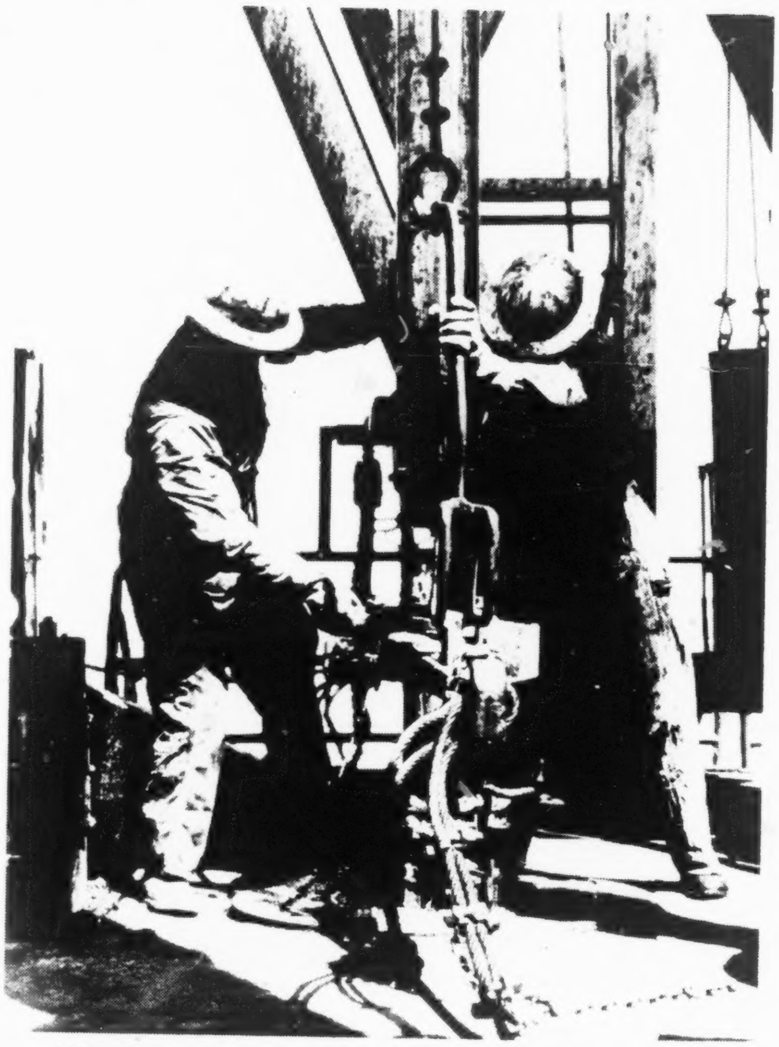
Landscape architects plan and supervise the establishment of parks, highways, housing projects, school grounds, and residential areas. Their specific activities are concerned with the establishment of scenic areas. Much time may be spent studying a site to determine its features and what sort of grading and planting would most enhance its beauty. Plans are drawn that show how buildings, roads, walks, trees, terraces, shrubs, and other features can be arranged for the greatest beauty and enjoyment.

Surveyors determine the locations and measurements of contours, elevations, points, and lines on the earth's surface. Various types of survey instruments may be used. Instrumentmen, chainmen, and rodmen assist the surveyor in his work. Readings are taken using a survey instrument and rod, or other instruments. The readings are recorded and used in calculating the desired information. Surveyors work under conditions that vary from very hot to cold, and from dusty to muddy. Occasionally surveyors work in dense forests where mosquitoes and other annoying insects are present. Briers and poisonous vines also may be found in their work environment. Frequently, members of a survey party must chop their way through weeds and brush.



The forestry occupations in the Outdoor Group are concerned with managing, developing, protecting, and harvesting forest lands. Foresters spend much time walking through forests, studying and measuring trees, calculating the amount of salable timber present, marking the trees to be cut, inspecting for damage by insects and diseases, and preventing and controlling forest fires. The work is strenuous and often requires persons who are physically able to walk long distances and to use axe and saw. The conditions of the work may be very hot or cold. A forester may get caught without shelter in a rain or snow storm. A forester may come into contact with many kinds of insects and poisonous plants. Also, foresters must frequently possess the skill to operate various kinds of power equipment, such as saws, tractors, sprayers, and tree planters.

Much of the work in the petroleum occupations included in the Outdoor Group requires physically capable men who can put in long hours of rugged activities. Drilling rigs must be erected and, once erected, they usually are operated twenty-four hours per day. Access roads must be constructed to the drilling-rig sites. Supplies must be transported to the sites. Wells, once they are drilled, must also be maintained if they are productive. The working conditions in occupations in the petroleum and natural gas industries may be hot and dusty or may be located on rigs in oceans and lakes. A worker may become covered with dust and grease while on the job. Workers with drilling or construction crews also frequently must travel many miles from home for several days or weeks at a time.



Workers in Oil Drilling Occupations. (Courtesy Standard Oil (N.J.), New York.)

3. How important are Outdoor occupations?

Outdoor occupations are very important in the nation's economy. Outdoor occupations include those that are concerned with the production of food, fiber, and forestry products, petroleum, and natural gas. The well-being of all mankind depends upon these occupations.

The affluent life in America must be attributed to a productive agriculture. One person engaged in production agriculture produces sufficient food or fiber to meet the needs of more than fifty people. Currently, there are slightly less than five million persons employed in production agriculture in the United States. Agricultural occupations other than production agriculture are also quite important. Two persons are employed in agricultural occupations off the farm for every one person employed in agriculture on the farm.

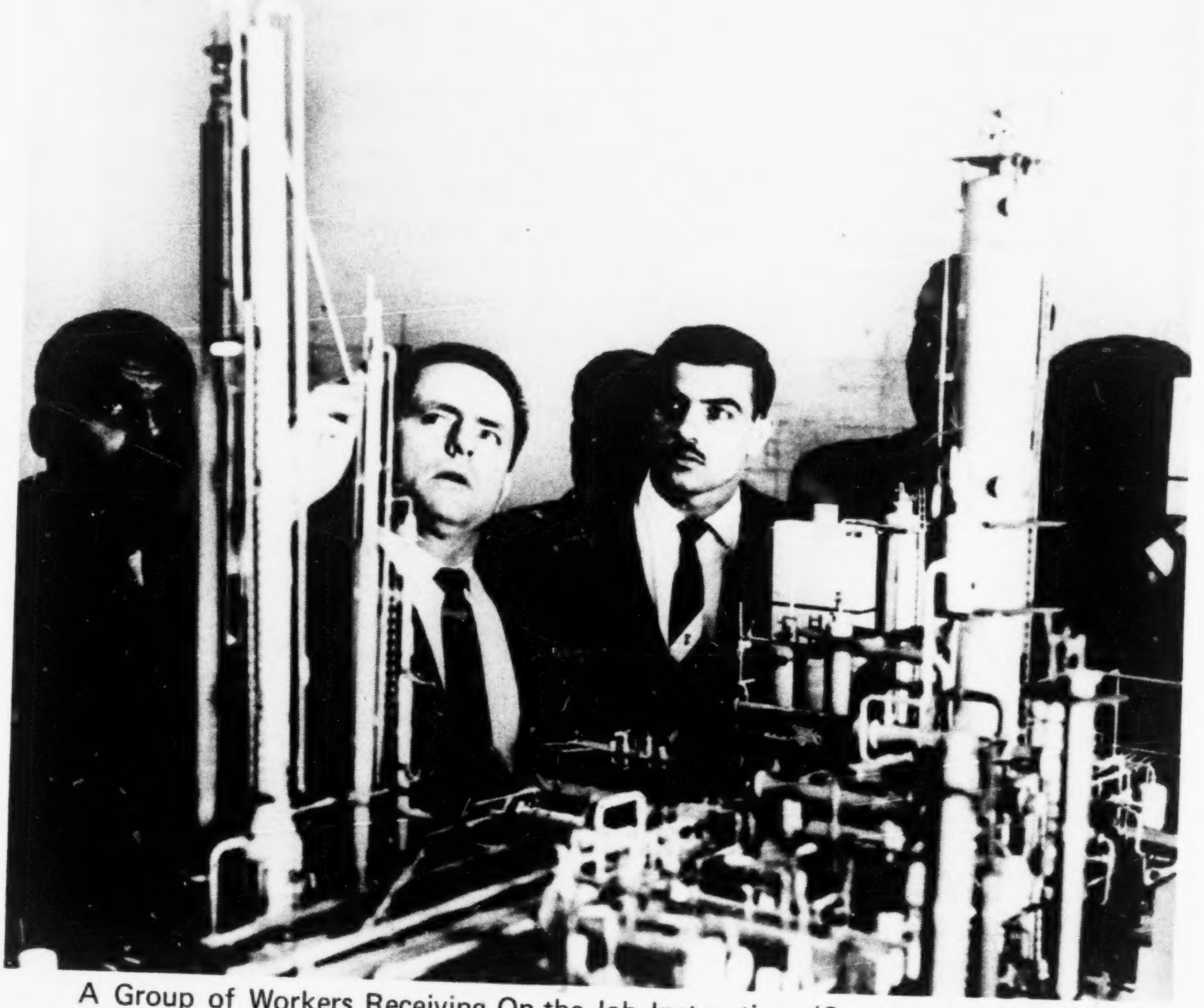
Much of the power used in manufacturing plants and in transportation is produced by petroleum and natural gas industries. In fact, about three-fourths of all energy fuels used in America is supplied by petroleum. A large portion of the heat for homes, schools and factories comes from petroleum or natural gas. A large number of synthetic products are made from petroleum, including certain fertilizers, plastics, and synthetic rubber products. Almost one-half million persons are employed in the petroleum industry in the United States. These persons are involved in exploration and drilling operations, in refineries, and in various types of processing plants. The number of persons employed in producing natural gas and petroleum is close to 280,000.

The other occupations in the Outdoor Group do not have nearly as many employees as do the petroleum and agricultural industries. There are only about 5,000 landscape architects in the United States. A larger number of workers (estimated at 23,000) are employed as foresters. The largest number in the Outdoor Group, except in petroleum and agricultural production, is in surveying. The number of surveyors is close to 45,000. Several thousand assistants, known as rodmen and chainmen, aid surveyors in their work.

A Pilot Flying a Small Plane Dusting a Crop. (Courtesy New Holland Division of Sperry Rand Corporation, New Holland, Pennsylvania.)

4. What education or training is desirable for success in Outdoor occupations?

The amount of education necessary for entering Outdoor occupations varies considerably. Advancement is based upon education and productivity while on the job. It is not necessary to have a high school diploma for low-paying, menial, outdoor jobs. Other jobs require advanced degrees. Many require high school or vocational school diplomas. Surveyors, foresters, and other professional occupations, require at least a bachelor's degree. Most Outdoor occupations in the petroleum and natural gas industries require only a high school diploma. An inexperienced worker frequently receives on-the-job training under the supervision of an experienced foreman or supervisor. On-the-job experience is required for advancement in most of the Outdoor occupations.



A Group of Workers Receiving On-the-Job Instruction. (Courtesy Standard Oil Company (N. J.), New York.)

It is always important to take courses in school that will be beneficial in future occupations. For the agricultural occupations in the Outdoor Group, courses in agriculture are beneficial. Many schools offer three or more years of agriculture in the high school grades. Persons contemplating any agricultural occupation, such as in forestry, ornamental horticulture, or mechanics, should take agricultural courses if they are available. Courses in biology and general science also are helpful. Persons contemplating careers in surveying should take as many mathematics courses, especially geometry, as possible in high school. Courses in communications are valuable in all occupations.

5. *What are the earnings and fringe benefits of Outdoor occupations?*

Earnings in Outdoor occupations vary considerably. Earnings from occupations in production agriculture vary according to the size of the farm, kinds of crops or livestock produced, demand and supply for the crops or livestock produced, and the general price structure.

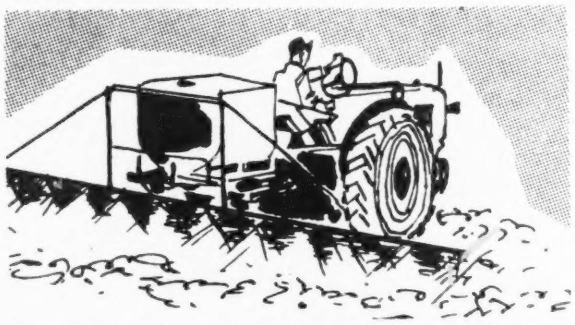
It is logical that managers of large farms would earn more money than managers of smaller farms. The same frequently is true with the other occupations found on farms. Earnings also may vary with the yield of the crops or livestock produced. Earnings usually are greater when a large crop is produced. Years in which crop productivity is low also indicate that income is lower than in other years. Of course, the income from some production agriculture occupations is not based upon production. The people in these occupations receive the same amount of pay regardless of crop production. Fringe benefits in production agriculture occupations frequently include rent-free housing, free utilities, and other benefits. There also may be considerable free time during the winter months.

Occupations in the petroleum and natural gas industries frequently pay well when compared with other Outdoor occupations. Earnings usually range from two- to four-dollars or more per hour. Workers often average slightly more than forty hours of work per week. Fringe benefits frequently include paid vacation and sick leave. Workers on the late night shift may receive 10- to 20-cents per hour more for their work.

Occupations in survey work (surveyors and their assistants) pay on the bases of education, experience, and degree of responsibility. Survey party chiefs may receive up to $10,000 or more per year. Starting salary frequently is a little less. Assistants, such as rodmen and chainmen, do not receive as much pay—frequently minimum wages or only slightly above.

Pay in forestry occupations varies considerably. Foresters with college degrees start at annual salaries of around $6,000 to $8,000. District rangers employed by the government earn $9,000 or more per year. Forestry aids and technicians receive from $5,000 to $7,000 a year. Occasionally, foresters may be furnished rent-free housing. Paid vacations and sick leave are included in the fringe benefits.

6. *What is the employment outlook for Outdoor occupations?*



The number of persons employed in production agriculture has been declining in recent years. Such a trend does not mean that farming is declining in importance, but that machinery and technology are replacing human work. This trend indicates that fewer persons are needed but that these few must be well educated and possess a high degree of skill.

Employment in the petroleum and natural gas industries has been gradually declining in recent years. This is primarily due to increased mechanization. Most of the opportunities that will be available will result from the death or retirement of present workers.

The employment opportunities in surveying occupations are expected to be good during the next few years. The rapid development of cities and highways will demand a large number of surveyors, instrumentmen, rodmen, and chainmen.

Employment in certain forestry occupations is expected to increase during the next few years. As the population grows, so does the demand for forestry products, such as paper and lumber. The increased demand for persons with college degrees in forestry will come from both industry and government. The number of persons employed in certain occupations involving forest production will decline due to increased mechanization. More highly skilled persons will be required to operate the machinery used in forest production.

Review Questions:

1. What is an Outdoor occupation?
2. How has the nature of the work in production agriculture occupations changed?
3. What high school courses are beneficial in entering certain Outdoor occupations?
4. What is the trend in employment in Outdoor occupations?

Suggested Activities:

1. Review various occupational information materials. Carefully note all occupations which are in the Outdoor Group. List occupations other than those given in this publication which you believe are in the Outdoor Group.

2. Invite someone who is employed in an Outdoor occupation to visit your class and discuss the nature of his work.

3. Develop a display, bulletin board, or poster that depicts occupations in the Outdoor Group. Cut from magazines or newspapers, pictures which show workers in the Outdoor occupations.

4. Review the want ads of a newspaper. Cut out and place those ads for jobs in the Outdoor Group on a poster or bulletin board. Note where they are found, the rate of pay, and requirements for entry.

5. Review the yellow pages of the local telephone directory. Prepare a list of all businesses which might have Outdoor occupations.

6. Compile a list of all the persons you know who work in Outdoor occupations. Indicate their occupations and employers.

7. Invite the agribusiness teacher in your school to visit your class. Have him discuss Outdoor occupations that are related to agricultural subjects. It would also be well to have him discuss how enrolling in an agribusiness class can help provide the training needed for entering various occupations.

8. Visit the agribusiness department in your school. Have the teacher explain the facilities found there. (It is suggested that arrangements for the visit be made well ahead of the visit.)

9. Investigate FFA. Determine what it is, what it does, and how it functions.

10. As the class members name the local businesses and firms that employ people in Outdoor occupations list them on the chalkboard. Ask if any members of the class know people employed at these places.

11. Select and conduct one or more of the following activities related to agricultural occupations:
    a. Production agriculture
        (1) Visit and tour a nearby farm. Interview the operator or manager to become familiar with the nature of production agriculture. Ask the following questions:
            (a) What are the main sources of income (specific crops and livestock) on the farm?
            (b) How many people work on the farm? How are they paid (hourly, daily, monthly, a share of production, etc.)?
            (c) What are the main problems facing this farm?
            (d) What kind of machinery and equipment are used?
        (2) View one or more of the following motion pictures:

(a) *Providers of Plenty*

(b) *Vocations in Agriculture*

(c) *The Promise of Agriculture*

(d) *Dynamic Careers in a Rewarding Industry*

(e) *Food Supply: Its Effect on Civilization*

(f) *No Limit to Catfish Farming*

(g) *And So It Grows* (This film also relates to horticulture.)

All of the above films are available from:

Film Library, Curriculum Coordinating Unit
P. O. Drawer DX
State College, Mississippi 39762

b. Agricultural mechanics

(1) Tour the agricultural mechanics shop in your high school. Determine the kind of instruction given and the nature of the activities performed in the shop.

(2) Visit the agricultural mechanics shop in your school. Perform the following activities:

(a) Weld two pieces of metal together with an arc welding machine.
(b) Service the air cleaner on a tractor.
(c) Service the battery in a tractor.
(d) Pack the front wheel bearings on a tractor.

(3) Visit a farm or other agricultural business and observe the operation of agricultural machinery. Note the skills required to operate and maintain the machinery.

(4) Visit a local agricultural equipment dealer. Tour the facilities and observe the employees at work.

(5) View the following film:

Agricultural Engineering, Profession With a Future

Available from: Film Library, Curriculum Coordinating Unit
P. O. Drawer DX
State College, Mississippi 39762

c. Ornamental horticulture (including landscape architecture)

(1) Visit a nearby nursery or flower shop. Arrange for the manager to provide a tour of the facilities.

(2) Graft a pecan stock with a selected scion. Consult horticultural books or an agricultural teacher about when and how to do it.

(3) Make a plot plan of your home and the lawn surrounding it, identifying all trees, shrubs, and flowers. Study the plan. Consult references on landscaping to determine how the landscape design can be improved.

(4) Plant tomato seed in a flat in a greenhouse, climatorium, or on the window sill. When the plants have reached the proper size, transplant to peat pots or cut-off milk cartons. Transplant to a garden when five to eight inches high.

(5) Plan and conduct a beautification project on the school grounds.

d. Agricultural supplies

(1) Visit a nearby feed, seed, or fertilizer store. Attempt to determine the answers to the following questions:

(a) What kinds of supplies are sold?
(b) Are any of the products dangerous?
(c) What is the nature of the work?
(d) What kinds of questions do customers ask?

e. Agricultural products

  (1) Visit a cotton gin during the fall months when it is operating. Note the process involved in ginning the cotton and the mechanical operations of the ginning equipment.

  (2) Visit a nearby livestock auction. Observe how the cattle are penned, tagged, auctioned, and weighed.

  (3) Visit a nearby vegetable packing shed or collection point. Identify the kinds of vegetables and determine how they are transported, weighed, graded, and stored.

f. Forestry

  (1) Invite a forester to visit class and discuss the occupations in forestry.

  (2) Visit a nearby fire tower. Talk to the person on duty concerning the nature of his work.

  (3) Make a trip to a forest that is being harvested. Note how the trees are cut, measured, loaded, and hauled. Identify the kinds of trees being harvested. Talk to one of the workers about the kind of work involved.

  (4) View one or more of the following films:

    (a) *The Paper Forest*

    (b) *From Trees to Paper*

    (c) *The Forest Produces*

    (d) *The Forest Grows*

    (e) *From Trees to Lumber*

    (f) *Forests and Conservation*

    (g) *It's No Picnic*

    (h) *It's a Tree Country*

    All of the above films are available from:

    Film Library, Curriculum Coordinating Unit
    P. O. Drawer DX
    State College, Mississippi 39762

12. Conduct one or more of the following activities which relate to petroleum occupations:

  a. Arrange to visit a nearby oil well drilling rig. Observe the operation of the rig. If possible, talk to the driller about the drilling procedure and the problems encountered in drilling a well.

  b. Contact an oil refinery and arrange for a field trip. Tour the facilities of the refinery. Note the different occupations and the nature of the work in each occupation. Talk to some of the people who work there.

  c. Arrange for a visit with a seismograph crew while at work. Talk to members of the crew about the work they are doing.

13. Conduct one or more of the following activities which relate to surveying occupations:

  a. Contact a local surveyor and arrange for him to visit class and discuss his occupation. It would be well for him to bring some of his survey instruments and demonstrate their use to the class.

  b. Spend a day with a survey party. Note the nature of the work of each member of the party. Observe how the instruments are read.

  c. Attempt to write a description of the land on which your home is located. The description should include the range, section, and township. Consult a deed to the property or the chancery clerk in your county for help in writing the description and in checking for accuracy.

14. Select one or more occupations in the Outdoor Group in which you are interested. Determine the following information for each occupation: (Your teacher may have prepared some forms for your use.)

OCCUPATIONAL STUDY OUTLINE

A. *Name of Occupation:*

B. *Duties of the Occupation:*

C. *Qualifications:* What are the personal requirements?

D. *Age:* How old must I be to enter the occupation?

E. *Sex:* Is this an occupation in which others of my sex are normally employed?

F. *Specific Physical and Health Requirements:* Am I the correct height to do the work? Are my eyesight and hearing adequate? Am I strong enough?

G. *Interest:* Do I possess this interest? If not, could I develop interest in this type of work?

H. *Abilities:* Do I possess the required abilities? If not, could I acquire the knowledge and skills necessary to do the job?

I. *Personality:* Do I possess the personal qualities necessary for doing this type of work? If not, could I develop these qualities?

J. *Values and Attitudes:* Does anything about this job violate values and attitudes I have about people and work? If so, could I adjust to situations that required that I change my values and attitudes?

K. *Preparation:* What subjects do I need to study? What special training will I need? How long will it take to receive this training? How much will it cost? Can I get this training within the state? Is work experience required for entry into this occupation? What is the method of entry into this occupation?

L. *Working Conditions on the Job:* Is it hazardous work? Is it noisy or dirty? Will I be working in shifts? Will I work indoors or outdoors? Is it hard work? Does the work require being away from home for long periods of time?

M. *Rewards from Work:* How much is the beginning pay? Is there chance for advancement? Will this work experience help me get a better job? Would I be happy doing this type of work?

N. *Employment Outlook:* How many are employed in the occupation at present? Are there employment opportunities in my community or state for this type of work?

O. *Special Requirements (such as certification, licenses, and examinations):*

XII. Exploring Science Occupations

Science is popular among youth. You probably like to study science. Many other students in your school also like to study it. There are a number of occupations which involve science. The occupations in the Science Group relate to the science classes you take in high school. After you have studied this unit you will be able to determine if you are interested in one of the Science occupations.

The following questions about the occupations in the Science Group will be answered:

1. **What is science? What are the kinds of science?**
2. **What occupations are in the Science Group?**
3. **How important are Science occupations?**
4. **What is the nature of biological science occupations?**
5. **What is the nature of earth science occupations?**
6. **What is the nature of physical science occupations?**
7. **What is the nature of mathematics occupations?**
8. **What is the nature of social science occupations?**

1. What is science? What are the kinds of science?

Science includes many things. In its broadest sense, it is the knowledge of principles or facts. The part of knowledge which relates to the physical world around us is known as *natural science.* That which is concerned with all aspects of human society is *social science.* It is very easy to make the basic distinction between natural and social sciences. Natural science is concerned with plants, animals, the earth, and the forces that act upon each of these. Mathematics is also frequently included as a natural science. Social science is the study of man from his origin to an analysis of his current behavior, including how society functions. Social science includes economics, sociology, politics, civics, and other such sciences.

The Science Group is primarily concerned with occupations in which the people are interested in natural science. A few of the occupations included are in the social sciences. It must be noted that many of the people employed in natural science occupations must also have knowledge and skill in social science.

Natural Science

Natural science is commonly divided into four broad areas—*biological* science, *earth* science, *physical* science, and *mathematics.*

Biological Science.

Biological science (commonly called biology) is also known as life science since it is concerned with all living things—plants and animals. The phase of biology dealing with plants is known as botany, whereas that dealing with animals is known as zoology.

Earth Science.

Earth science can be easily distinguished from biological science. Earth science does not include living plants or animals even though plants and animals are dependent upon the earth for sustenance. Earth science is concerned with the history of the earth; the composition of the earth's crust, interior, and atmosphere; and the characteristics of its parts.

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Earth science is subdivided, with the subdivisions based upon the part of the earth being studied. Among these subdivisions are geology, geophysics, meterology, and oceanography. Geology is concerned with the structure, composition, and history of the earth's crust, including rocks, minerals, and fossils. Geophysics is a broad overlapping term which includes the study of the earth's size, shape, atmosphere, and bodies of land and water. Highly complex scientific instruments are used to do much of the study. Meterology involves the study of the earth's atmosphere and all of the bodies in outer space. It includes the study and forecasting of weather. Oceanography involves the study of the oceans on the earth's surface. It involves, among other things, the study of tides, currents, waves, water temperature, and the plants and animals that live in the water of the ocean.

Physical Science.

Physical science deals with how the things about us are made, what they are made of, and the forces that act upon these things. Physical science can be divided into several groups including chemistry, biochemistry, physics, and astronomy. Chemistry is concerned with the composition of materials and the reactions they may cause. Biochemistry involves the chemical compounds and processes that take place in plants and animals. Physics is concerned with matter and motion, i.e., why and how things move and the forces that act upon them. Astronomy involves studying the sun, moon, planets, and stars. It is concerned with the size, shape, temperature, and chemical composition of these bodies.

Mathematics.

Mathematics is a science that is fundamental to the other sciences, engineering, and human affairs. It is one of the oldest and most basic sciences. At the present time it is becoming more important because of the use of electronic computers. Mathematics may be divided into two broad classes: (1) applied mathematics, and (2) pure or theoretical mathematics. Applied mathematics is concerned with the development of solutions to problems in the other sciences. Theoretical mathematics involves the development of principles and discovery of relationships among mathematical forms. Mathematics and algebra, geometry, trigonometry, and general mathematics are familiar to most high school pupils.

Social Science

Social science can be conveniently divided into six areas which include anthropology, economics, geography, history, political science, and sociology.

Anthropology.

Anthropology is the study of man from primitive conditions to his present level of civil development. It includes man's origin, physical characteristics, customs, languages, traditions, material possessions, and social and religious beliefs and practices. The major areas of anthropology are archeology, ethnology, and linguistics.

Economics.

Economics is concerned with the production of goods and services which satisfy the wants of man. It involves the establishment of price structure by means of supply and demand.

Geography.

Geography is the science of the earth and of the life that is on it. Geographers attempt to describe the physical characteristics of the earth, including minerals, soils, water, vegetation, climate, and terrain. There are several different kinds of geography. Economic geography deals with the location of economic activities, such as mining, forestry, farming, and manufacturing. Political geography is the study of political forces upon geographic boundaries. Urban geography is a study of cities and community planning. Physical geography is a study of the earth's physical characteristics. Cartography is a special field of geography involving the design and construction of maps.

History.

History is a study of events that have occurred in the past. It involves investigating past events and recording the findings as perceived by the historian. Historians who specialize in identifying, preserving, and making available documentary materials are known as archivists.

Political Science.

Political science is the study of all levels of government—city, county, state, regional, national, and international. It is concerned with what the government is, what it does, how it does it, and why.

Sociology.

Sociology is concerned with the origin and evolution of society, especially of the groups formed by man. These include family, tribal, community, state, religious, social, political, and many other groups.

The Science Group is primarily concerned with occupations related to science as it is commonly studied by pupils enrolled in high school courses of biology, sociology, economics, history, mathematics, general science, chemistry, and physics. It is concerned with those occupations which require a relatively high level of knowledge and skill in science. However, the benefits of science are not limited to this occupational interest Group. A knowledge of science is required in a large number of occupations in the other interest Groups. This Group includes those occupations in which the people employed have a special interest in science. In the social sciences, only the specific occupations in anthropology, geography, and political science are included.

2. *What occupations are in the Science Group?*

The occupations in the Science Group are in Levels just as they are with the other Groups. However, the Levels are indicated according to the kinds of science. A list and brief description of examples of occupations in the Science Group are shown below.

Biological Science

Level 1

Anatomist—disects and examines the various parts of plants and animals in order to study their structure and function.

Biochemist—studies the chemical processes that occur in living organisms, especially the action of foods, drugs, serums, hormones, and other substances.

Biophysicist—studies living cells and organisms. Research will determine the electrical and mechanical energy emitted by cells and organisms.

Botanist—is concerned with all aspects of plant life including development, physiology, heredity, environment, distribution, structure, and economic value.

Embryologist—is concerned with the formation and development of embryos in plants and animals.

Geneticist—studies the inheritance and variation that is found in all forms of life—both plant and animal life.

Microbiologist—studies, identifies, and grows all forms of bacteria and other microscopic organisms.

Osteopath—is commonly known as a physician. The occupation involves examination of the human body and practice of a medical theory which holds that disease is due chiefly to tissues which are improperly arranged.

Physician—diagnoses and treats diseases and disorders of the human body.

Physiologist—is generally concerned with the structure of cells and organs and the functions of these in plants or animals.

Psychologist—is concerned with the mental processes of the human body. (There are several types of psychologists.)

Zoologist—studies the origin, classification, diseases, genetics, etc., related to animal life.

Level 2

Agronomist—conducts research about growing agricultural crops.

Dentist—diagnoses and treats diseases, injuries, and malformations of teeth and gums.

Dietitian—specializes in planning and directing the preparation of food and drink to meet nutritional requirements of the human body.

Entomologist—investigates insects in relation to plant and animal life.

Home economist—promotes, develops, and interprets homemaking procedures conducive to good health and welfare of individuals and families.

Horticulturist—studies all aspects of the growing of fruit, vegetables, nuts, flowers, berries, and shrubs.

Husbandry specialist—is concerned with all aspects of livestock production.

Medical librarian—manages library containing documents on medicine and medical profession.

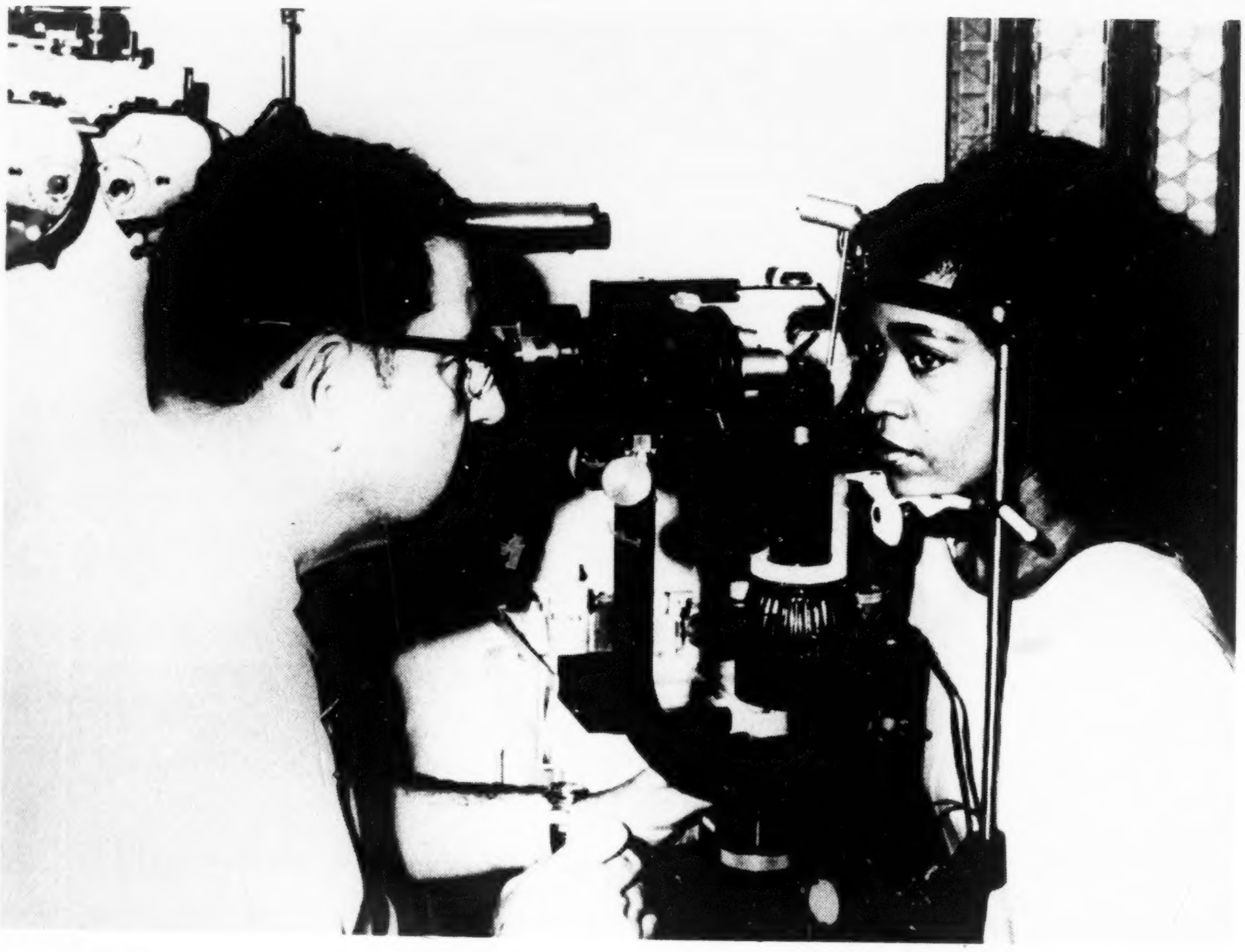
Nurse (RN)—specializes in the care of injured and ill persons; assists the physician.

Nutritionist—studies the role of nutrition in health and disease control.

Optometrist—examines eyes and prescribes corrective procedures.

Pharmacologist—studies effects of drugs and other substances on animal life.

Sanitarian—is concerned with environmental health including food processing and serving, air pollution, sewage disposal, etc.



An Optometrist at Work. (Courtesy American Optometric Association, Saint Louis, Missouri.)

Level 3

Chiropractor—specializes in adjusting the body to prevent disease and correct abnormalities.

County agricultural agent—instructs and advises farmers concerning agricultural problems.

County home demonstration agent—instructs and advises women in improvement of rural family life.

Dental hygienist—involved in the care of teeth; instructs the general public about the proper care of teeth and mouth.

Medical technologist—performs laboratory tests on specimens of the human body to detect disease.

Podiatrist—is concerned with diagnosing and treating diseases of the human foot.

Level 4

Laboratory technician—performs laboratory work involving the testing and analysis of substances.

Levels 5 and 6—no occupations listed.

Earth Science

Level 1

Astrogeologist—applies knowledge of the earth's geology in studying the surface conditions on the moon and other planets.

Geochemist—studies the chemical composition of minerals and rocks and changes in them.

Geologist—studies the composition, history, and structure of the surface of the earth.

Geomorphologist—studies the form of the earth's surface including changes caused by erosion, glaciation, and sedimentation.

Geophysicist—is concerned with many things, including the composition and physical aspects of the earth's surface, such as size, shape, and other phenomena.

Meteorologist—studies atmospheric conditions and meteorological data to forecast weather.

Mineralogist—examines, analyzes, and classifies minerals and precious stones.

Oceanographer—studies oceans to observe characteristics, movements, physical properties, and forms of plant and animal life that live there.

Paleontologist—investigates fossils as found on or in the earth in an attempt to trace the evolution and development of past life.

Petrologist—studies the composition, structure, and history of rock formations and attempts to determine the changes taking place in the formations.

Sedimentologist—studies the processes by which sedimentary rocks are formed.

Stratigrapher—analyzes fossils and minerals to determine the distribution and arrangement of sedimentary rock.

Level 2

Climatologist—interprets data on past rainfall, sunshine, wind, temperature, and other climatic phenomena in order to predict future climatic conditions.

Geodesist—establishes bench marks and other points that can be used in making maps.

Geomagnitician—establishes magnetic observations to chart the earth's magnetic field.

Hydrologist—studies the development, distribution, and disposition of water on land areas.

Tectonophysicist—investigates movement of materials in the earth's crust and attempts to explain the forces causing the movement.

Level 3

Soil conservationist—plans and develops practices to conserve the soil and increase soil fertility.

Soil scientist—studies characteristics of the soil; makes maps to show the location of known soils.

Levels 4, 5, and 6—no occupations listed.

Physical Science

Level 1

Astrometrist—specializes in measuring celestial bodies.

Astronomer—studies the celestial bodies.

Astrophysicist—an astronomer who specializes in temperature, amount of light emitted, and chemical composition of celestial bodies.

Chemist—investigates the composition and properties of matter.

Physicist—observes and analyzes the forms of energy, structure of matter, and relationship between matter and energy.

Spectroscopist—examines metals and minerals to determine composition and variation in composition.

Level 2

Pharmacist—prepares and dispenses medications as directed by physicians.

Synoptic meteorologist—is a weather forecaster.

Level 3

X-Ray technician—operates X-Ray equipment (also known as radiography equipment).

Level 4

Dispensing optician—prepares eyeglass lenses to prescription specifications, puts lenses in frames, and adjusts frames to customer.

Levels 5 and 6 — no occupations listed.

Mathematics

Level 1

Statistician—plans, collects, organizes, interprets, summarizes, and analyzes numerical data.

Level 2

Mathematician—conducts research, develops ideas for applying mathematics, and applies mathematical formulas to data.

Levels 3, 4, 5, and 6 —no occupations listed.

Anthropology

Level 1

Anthropologist—studies the origin and development of man including the characteristics of present and past civilizations.

Archaeologist—attempts to reconstruct past civilizations by digging into the earth to locate the remains of homes, clothing, tools, and other evidences of past life.

Ethnologist—studies the way of life of people, especially the more primitive civilizations, by living among them.

Linguist—an anthropologist who specializes in languages; he may speak several languages.

No other Levels are listed.

Political Science

Level 1

Newspaper reporter—gathers information on current events and writes articles describing these events for publication in newspapers.

No other Levels are listed.

3. *How important are Science occupations?*

Occupations which require special interest in science are very important. The largest number of persons with occupations in natural science are in the physical sciences. More than 195,000 persons are in occupations in physical science. Of these, 122,000 are in chemistry, 44,000 in physics, 1,100 in astronomy, and 28,500 are in the other physical sciences.

The biological sciences employ 155,000 persons. Most of these are in biology, agriculture, and medicine. The number employed are: biology—68,000, agricultural scientists—47,000, and medicine—40,000.

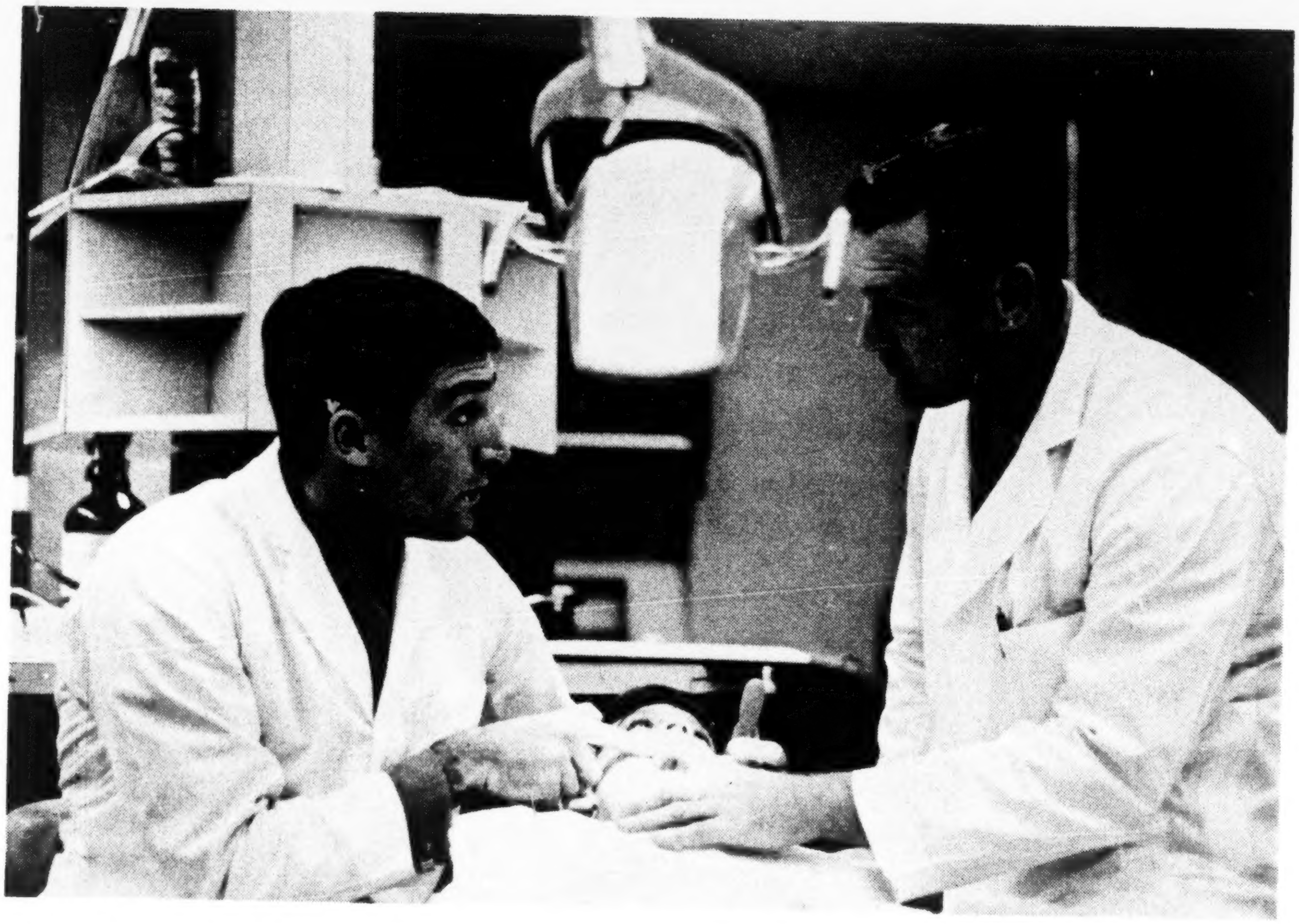
Fewer persons are employed in earth science than in the other natural sciences. A total of 26,500 scientists are employed in the earth sciences. The largest number of these are employed in geology (15,000). Others are employed in geophysics (5,000), meterology (3,500), and oceanography (3,000).

The number of people employed in mathematics-related occupations has been steadily increasing in recent years. There are presently about 57,000 mathematicians in the United States, not including teachers of mathematics. There are also 22,000 employed in statistics and 3,000 employed in other mathematics occupations.

The number of persons employed in the social sciences is considerably less than the number in the natural sciences. About 50,000 people are currently employed in social science. There are about 2,700 employed in anthropology, 9,000 in political science, and 5,000 in sociology. (Some of the occupations in the social sciences that have been listed are discussed in other occupational Groups.)

4. *What is the nature of biological science occupations?*

Biological science is concerned with plants and animals. People employed in biological science occupations are known as biological scientists. Frequently, biological scientists specialize in either plants or animals. Those who specialize in plants are botanists and those specializing in animals are known as zoologists. Some biologists develop specialties with one kind of plant or animal. Biological science may be divided into biology, medicine, and agriculture.



Dentists at Work. (Courtesy American Association of Dental Schools, Chicago, Illinois.)

The work of a biological scientist involves the study of the structure, development, behavior, and life processes of plants and animals. The relationship between plants and animals is also studied. Many biological scientists are engaged in research and development.

The research may be confined to air-conditioned indoor laboratories with very little contact with the outside world, or may take place in strange environments that are relatively unexplored. Biologists may work in conditions similar to those of the hot, steamy Amazon jungle or the snow-covered mountainous regions of the North. Biological work may be carried on in the conditions of your local community. Time may be spent sitting in a laboratory looking through a microscope at tiny plants or animals that could not otherwise be seen. Some biologists may spend considerable time dissecting animals and examining each part for disease or malformation. Others may study genetics and attempt to develop plants and animals with special features.

Most biologists must have a thorough knowledge of mathematical and statistical procedures. They must also be able to read well since quite often many hours are spent reading technical journals and research reports. Research biologists must also write their findings for publication so that what has been learned from their research can be shared with other biologists. A number of biological scientists have combined the careers of teaching and research. Biologists must also frequently assume responsibility in management and administrative work.

Fishery Biologists Injecting Hormones into a Fish. (Courtesy U.S. Department of the Interior, Bureau of Sport Fisheries and Wildlife.)

Location.

Biological scientists are employed in many places and by many employers. Almost half of them are employed by colleges and universities. Those specializing in medicine may be self-employed or employed by medical schools and hospitals. Biological scientists specializing in agricultural science are often employed by agricultural colleges and experiment stations. The United States Department of Agriculture employs about 20,000. Fish and wildlife agencies employ many of those with special interest in this phase of biology. Many biologists find employment with private industry. More than 33,000 biological scientists are employed by industry. Most of these are with chemical manufacturers, food processors and producers, and drug manufacturers.

Occupations for biological scientists are found in all states, but a third of them are found in California, New York, Illinois, Maryland, and Pennsylvania. Both men and women are employed in biological science.

Education Needed for Entry and Advancement.

All biological scientists need to be able to read, speak, and write well. Subjects which will improve communication skills are a must. Prospective biological scientists should obtain a broad education in biology and related sciences, such as chemistry, physics, and mathematics. Those contemplating agricultural science careers should study agriculture.

The biological science occupations included in this category require a relatively high level of knowledge and skill. Many require advanced degrees, such as the Ph.D., in fields of special interest. A bachelor's degree is adequate for many of the beginning jobs but is frequently not sufficient for advancement to higher positions. Students planning to become biological scientists should obtain the broadest education possible prior to entering specialized study.

Employment Outlook.

Demand for biological scientists will be strong in the next few years, especially for those with advanced education and degrees. Persons with bachelors' degrees can be expected to find employment as research assistants or technicians. It has been estimated that around 5,400 biological scientists will be needed each year for the next few years to fill new positions and replace those who leave. One of the areas of greatest demand will be in research, especially research in developing new drugs, chemicals, and processing methods.

5. What is the nature of earth science occupations?

Many earth scientists specialize in a particular aspect of earth science. Such specialization may mean that the occupation involves work which is almost totally outdoors. Other earth science occupations may demand that most of the working time be spent inside. Some of the earth scientists use very complex instruments which require considerable education for operation. The time of many geologists is spent outdoors studying the structure of the earth with the aid of scientific instruments and mapping what is discovered.

Geophysicists study many of the things studied by geologists, except that they are more concerned with the physical characteristics of the earth. Physics, mathematics, chemistry, and other sciences are frequently used. Geophysicists may use seismographs to measure and record the movement of the earth. Many geophysicists are involved in searching for oil and mineral deposits.

Meteorologists study the atmosphere in an attempt to understand ingredients, motion, processes, and influences acting upon the earth. Meteorologists are best known for their work in forecasting the weather. Some attempt to solve problems related to air pollution treatment, "making rain," etc. A number of meteorologists are involved in teaching and research at colleges and universities.

Oceanographers are concerned with the water that covers two-thirds of the earth's surface. The work of oceanographers is concerned with characteristics, movements, physical properties and life in the ocean. They may take the temperature of the water and investigate tides, waves, and currents. Samples, specimens, and data are collected and analyzed. The ocean floor may be investigated. Some oceanographers spend nearly all of their time on ships at sea. Others never board ships.

Location.

Many occupations in earth science are found close around us. They are with private industry or government. Most geologists are employed by private industry, especially by oil companies. The states with the greatest amount of oil production also have the largest number of geologists. Some geologists are placed in foreign countries by their employers for varying periods of time. Geophysicists are also largely employed by private industry, especially mining, oil, and gas companies. Some are employed by exploration and research firms. Most meteorologists are employed by research laboratories and the federal government. Colleges and universities employ persons with interests in all four of the main occupations in earth science.

Education Needed for Entry and Advancement.

All of the professional occupations in earth science require persons to have at least a bachelor's degree with a major in one of the earth sciences. The master's degree is required for most research and teaching positions in geology, geophysics, meteorology, and oceanography. Persons seeking the top positions should obtain a doctor's degree.

Very few colleges provide the necessary courses. Important courses that should be taken by all students contemplating a career in one of the earth science occupations are physics, mathematics, chemistry, biology and any courses in the area of specialization.

The person just beginning employment in an earth science occupation should expect to start as a research or laboratory assistant. Persons with experience in earth science are usually chosen for the administrative positions.

Employment Outlook.

The opportunity for employment in earth science is considered to be favorable during the next few years. Persons with advanced degrees will be in special demand. The greatest increase in demand for earth scientists will probably be in industry with a moderate demand in government jobs. The demand for persons to teach the earth sciences in colleges and universities will increase due to the increased number of students studying earth science.

6. What is the nature of physical science occupations?

The major occupations in physical science are in chemistry, biochemistry, physics, and astronomy. Many of the persons employed in occupations in these sciences are concerned with basic research. This basic research is concerned with the properties of matter and energy.

Chemists are concerned with the composition of matter. To determine the characteristics of matter, chemists frequently spend many hours in a laboratory observing reactions that occur in test tubes, keeping careful records of what they observe, and experimenting to see what will occur when certain chemicals are mixed. The work is often slow and meticulous. The environment of a chemist's laboratory is frequently filled with complicated apparatus and has a pungent odor of chemicals. Chemists also frequently write papers and give lectures on what they have observed.

The work of biochemists is similar to that of chemists except that biochemists are concerned with the chemical processes that occur in relation to plant and animal life. Biochemists analyze the processes that occur in plants and animals and how these processes are affected by food, drugs, and other substances. This study is especially important in medicine, nutrition, and agriculture. In the medical field, biochemists investigate the causes and cure of disease. In nutrition they study the nutrients necessary for good health and the effects of deficiencies of certain nutrients. In the field of agriculture, biochemists investigate soils, fertilizers, and plants for improvement and relationship to each other.

The work of physicists is important in many aspects of our society. About one-half of all the work of physicists is involved in research aimed at helping man understand the physical world around him. They are interested in the interaction between matter and energy. Mathematics is used considerably in the analysis of interactions. Physicists spend much of their time working in laboratories with scientific equipment. They have to design and construct much of the new and specialized equipment they use. Physicists also teach in colleges and universities.

Astronomers study the stars, sun, moon, and planets in an attempt to determine sizes, shapes, surface temperatures, chemical composition, and movements of these bodies. Complex instruments are used in the study. Astronomers usually teach, do research, or perform a combination of teaching and research. Considerable time may be spent in an observatory looking through a telescope. Various photographic and light-measuring devices may be attached to the telescope.

Location.

Most of the persons with interests in physical science are employed near heavily populated areas, such as Chicago, New York, and Philadelphia. Two-thirds of the chemists are employed by private industry engaged in the manufacture of food, petroleum products, paper, electrical equipment, and metal products. Others are employed by chemical, drug, food, and petroleum products companies; research laboratories; colleges and universities; and federal government agencies.

Biochemists are employed by private industry, especially electrical equipment industry. Others are employed by machinery, engineering, architectural, chemical, aerospace, and instrument industries. A large number of physicists are employed by colleges and universities in teaching and research. Government agencies employ a number of physicists.

The number of astronomers is small (1,100 in the United States); therefore, the opportunities for employment are limited. Astronomers are employed by private industry and by the federal government. A few are employed by colleges and universities.

Most of the opportunities for employment in physical science occupations are in the more heavily populated states. However, there are a few occupations for persons interested in physical science in Mississippi.

Education Needed for Entry and Advancement.

High school students interested in physical science occupations should take mathematics, chemistry, physics, and biology courses in high school. All courses prerequisite to entering a college curriculum in physical science should be taken. A high school student interested in majoring in one of the physical sciences in college should select an appropriate college and study the curriculum in which he wishes to enroll.

The minimum education for beginning employment in physical science occupations is a bachelor's degree. For advancement to higher positions, master's and doctor's degrees are essential. Persons with the widest experiences are usually the first to be advanced. Those successful in physical science, as in many other occupations, must keep their knowledge up-to-date by reading technical journals and attending conferences in which physical science subjects are discussed.

Employment Outlook.

The employment outlook for occupations in physical sciences is very good for the next few years. Persons with advanced degrees will be in greatest demand. Growth in many of the physical science occupations is occurring at a very rapid rate.

7. *What is the nature of mathematics occupations?*

Mathematicians work in a variety of activities. Some are engaged in theoretical work involving the development and discovery of new mathematical principles and relationships. Others are engaged in attempting to solve problems in the physical, earth, biological, and social sciences. Most of the work is performed indoors at a desk, calculator, or electronic computer. Many times mathematicians attempt to answer problems proposed by engineers and other scientists. For example, a mathematician may be called upon to compute the size of a steel beam necessary in the construction of a bridge or building. To solve this problem, the mathematician must compute the load-bearing capacity of the steel and how much load any given steel beam in a bridge must carry. Other mathematicians are engaged in teaching, quality control, management, and administration.

Location.

About one-half of the 57,000 mathematicians in the United States are employed in industries such as manufacturers of electrical equipment, aerospace equipment, and machinery. A few work for the government. More than half of the mathematicians are found in a few states: Maryland, New York, Illinois, Pennsylvania, Massachusetts, and New Jersey.

Education Needed for Entry and Advancement.

A high school student contemplating entering a mathematics occupation and majoring in mathematics in college should take as many mathematics courses as possible while in high school. It is also a good idea to take chemistry, physics, biology, or accounting courses which deal with the practical aspects of mathematics.

The minimum education required for entering an occupation in mathematics is a bachelor's degree in mathematics. A curriculum leading to a degree in mathematics is offered by many colleges and universities. More and more jobs require mathematicians with degrees beyond the bachelor's degree. Master's and doctor's degrees are necessary for most advancement and salary increases.

Employment Outlook.

Mathematics grows as scientific research grows. The indications now are that scientific research will grow rapidly in the immediate years ahead. Very rapid growth in the number of persons employed in mathematics is expected during the next few years. The education required for occupations in mathematics is also an excellent foundation for a number of other occupations.

8. What is the nature of social science occupations?

The social science occupations included in the Science Group are in anthropology, geography, and political science.

The nature of an anthropologist's work is easily stated. It is the study of man from his origin to his present status. Some anthropologists spend considerable time digging into the earth searching for evidence of past civilizations. These are known as archeologists. They examine skeleton remains, relics, and artifacts. Other anthropologists attempt to study the ways of life of primitive tribes. These are known as ethnologists. Ethnologists compare the cultures of various groups of people and study the sounds and structure of their language. Those who study language are frequently known as linguists. Still another kind of anthropologist is the physical anthropologist. He is interested in studying the human body and how it evolved into its present form. Attention is also given to the differences among races and groups of mankind.

Political scientists study government at all levels and in all countries. They frequently specialize in public administration, American government, or in the relationship between the governments of various countries of the world, i.e., international relations. Many political scientists teach either part-time or full-time. Much of their work is in research concerning legislation, public opinion, and political trends.

Location.

Most anthropologists and political scientists are employed by colleges and universities. A sizable number are employed by the federal government. A few are with industry and nonprofit organizations. Most of these occupations are found near the larger cities, especially Washington, D.C., with its many government jobs. Some are sent to foreign countries on special assignments.

Education Needed for Entry and Advancement.

The minimum education required for entering anthropology or political science occupations is a bachelor's degree. The doctor's degree is required for most permanent occupations in anthropology. It is very important that an appropriate college be selected. Graduate work is beneficial, and frequently required for a number of the jobs in geography and political science. Advancement to the top positions is based upon education and experience.

Employment Outlook.

The employment prospects for anthropologists and political scientists is expected to increase rapidly over the next few years. The outlook for geographers is favorable but is not as good as the outlook in anthropology and political science.

Review Questions:

1. What is the main interest of the following:
    biological science
    earth science
    physical science
    anthropology

2. Which Science occupations have the largest number of workers?

3. In general, what is the minimum amount of education required for entering Science occupations?

Suggested Activities:

1. Select one or more occupations in the Science Group in which you are interested. Determine the following information for each occupation: (Your teacher may have prepared some forms for your use.)

OCCUPATIONAL STUDY OUTLINE

A. *Name of Occupation:*

B. *Duties of the Occupation:*

C. *Qualifications:* What are the personal requirements?

D. *Age:* How old must I be to enter the occupation?

E. *Sex:* Is this an occupation in which others of my sex are normally employed?

F. *Specific Physical and Health Requirements:* Am I the correct height to do the work? Are my eyesight and hearing adequate? Am I strong enough?

G. *Interest:* Do I possess this interest? If not, could I develop interest in this type of work?

H. *Abilities:* Do I possess the required abilities? If not, could I acquire the knowledge and skills necessary to do the job?

I. *Personality:* Do I possess the personal qualities necessary for doing this type of work? If not, could I develop these qualities?

J. *Values and Attitudes:* Does anything about this job violate values and attitudes I have about people and work? If so, could I adjust to situations that required that I change my values and attitudes?

K. *Preparation:* What subjects do I need to study? What special training will I need? How long will it take to receive this training? How much will it cost? Can I get this training within the state? Is work experience required for entry into this occupation? What is the method of entry into this occupation?

L. *Working Conditions on the Job:* Is it hazardous work? Is it noisy or dirty? Will I be working in shifts? Will I work indoors or outdoors? Is it hard work? Does the work require being away from home for long periods of time?

M. *Rewards from Work:* How much is the beginning pay? Is there chance for advancement? Will this work experience help me get a better job? Would I be happy doing this type of work?

N. *Employment Outlook:* How many are employed in the occupation at present? Are there employment opportunities in my community or state for this type of work?

O. *Special Requirements (such as certification, licenses, and examinations):*

2. Review various occupational information materials. Carefully note all occupations which are in the Science Group. List occupations other than those given in this publication which you believe are in the Science Group.

3. Invite someone who is employed in a Science occupation to visit your class and discuss the nature of his work.

4. Develop a display, bulletin board, or poster depicting occupations in the Science Group. Cut pictures from magazines or newspapers which show workers in Science occupations.

5. Review the want ads of a newspaper. Cut out and place those ads for jobs in the Science Group on a poster or bulletin board. Note where they are found, the rate of pay, and requirements for entry.

6. Review the yellow pages of the local telephone directory. Make a list of all businesses which might have Science occupations.

7. Prepare a list of all the persons you know who work in Science occupations. Also indicate their occupations and employers.

8. Invite the biology, chemistry, or physics teacher in your school to visit class. Have him discuss Science occupations. It would also be well to have him discuss how enrolling in a science class can help provide the training needed for entering various occupations.

9. Visit the science department in your school. Have the teacher explain the facilities found there. (It is suggested that arrangements for the visit be made well ahead of the visit.)

10. As the class members name the local businesses and firms that employ people in Science occupations, list them on the chalkboard.

11. Select and conduct one or more of the following activities which relate to biological science:
    a. Structure and functions of the parts of plants. Do the following in the order listed:
        (1) Select a common plant (preferably one such as a cotton plant, zinnia, or marigold).
        (2) Carefully pull the selected plant from the soil, being careful not to damage any of its parts.
        (3) Divide the plant into its major parts—leaves, stems, roots, flowers, seed pods, etc.
        (4) Attach each part with tape, string, or wire, to a sheet of poster paper.
        (5) Label each part.
        (6) Place a description of the functions of each part on the poster paper beneath the names. (The functions of plant parts can be found in general science, biology, and botany books.)
    b. Growth and development of plants. Do the following steps in the order listed:
        (1) Secure two 6-inch flower pots.
        (2) Place fertile potting soil in each pot.
        (3) Plant several corn grains in one pot.
        (4) Plant several lima bean seed in the other pot.
        (5) Water the soil (Caution: DO NOT over-water).
        (6) Place the pots in a sunny location such as a window sill.
        (7) Check the flower pots daily.
        (8) Let seedlings grow for 3 days following emergence from the soil.

(9) Prepare a list of the differences in the way the plants grow.

(10) Use a general science, biology, or botany book to locate the scientific names and meaning of the difference in the growth and development characteristics that were observed.

(11) Write a one-page summary of your procedure and what you observed, using terminology that you think a botanist would use in writing a technical report.

c. Effect of light on plants. Perform the following steps:

(1) Secure a potted plant.

(2) Place the plant in a dark room where sunlight cannot reach it.

(3) Leave the plant in the dark room 4-5 days.

(4) Remove the plant from the dark room and observe.

(5) Refer to general science, biology, and botany books to help interpret what happened to the plant.

(6) Write a one-page summary of the changes in the plant that you observed and why the changes occurred. (Use the terminology that a scientist would use in writing a technical report.)

d. Anatomy. Make a trip to a diagnostic laboratory and observe the performance of a postmortem on a large animal. Note the kind of animal, the procedure used, the appearance of the internal organs, and the indication that disease was present. Also, have the laboratory worker, usually a veterinarian, sever the intestines. Look closely for the presence of worms and foreign objects such as wire or nails. Write a one-page report about what you observed. (It may be possible that these observations could be made in a veterinary clinic.)

e. Contact a medical or dental clinic and arrange for a tour of the facilities. Have someone familiar with the clinic explain how the clinic functions and is organized.

f. Contact an agricultural experiment station and arrange for a tour of the station. Have someone knowledgeable in the operation of the experiment station explain the experiments currently in progress.

g. Entomology. Make an insect collection by following these steps:

(1) Collect ten of the insects with the most economic importance in your home area.

(2) Mount and label the insects (give common and scientific names) on a sheet of poster paper.

(3) Below the name of each insect list the beneficial effects and harmful effects of each insect.

(4) Describe how it feeds and on what it feeds.

(5) Briefly describe its life cycle. (Use biology and entomology books as references in this activity.)

h. Nutrition. Perform the following project:

(1) Study the nutrients essential in the diet of man.

(2) Prepare a list of each of these nutrients and include the foods in which they may be found.

(3) Plan the meals for one adult person, or a family, for one week, being sure that all nutrient needs are met.

(4) If possible, have the menu plans you made put into practice with your family.

(5) Develop a chart on poster paper showing the foods that you plan to serve each meal.

i. Dietetics. Perform the following activities:

(1) Schedule a conference with your school's lunchroom dietician.

(2) During the conference determine answers to the following questions:

Who establishes the menu of food to be served?
What are the criteria for determining which foods will be served?
What legal and sanitation regulations must be observed?
What is the source of the foods that are served?

(3) In a report, write about your conference with the dietician.

j. Psychology and Psychiatry.

(1) Arrange for a conference with the school psychologist or have a psychologist or psychiatrist visit the class and explain the occupations in psychology and psychiatry.

(2) Read a book by one of the following persons and write a short report: Alfred Adler, Sigmund Freud, John B. Watson, B.F. Skinner, E.R. Guthrie, Elizabeth Hurlock, or David P. Ausubel.

(3) Visit an institution established for persons who are mentally ill.

12. Select and conduct one or more of the following activities which relate to earth science:

a. Meteorology.

(1) Collect weather maps for a period of one week as published in newspapers. Write a summary of what the maps showed, the forecasts that were made, and what the weather in your community was actually like.

(2) Set up a thermometer and take readings each day on a regular schedule. Place the thermometer so that it is outside but in the shade at all times. It is suggested that a chart be developed for recording the temperature at least three times daily for a period of one to two weeks. The chart could be set up as a table to aid in keeping the records.

Date	Time		Temperature
	a.m.	p.m.	

(3) Set up a rain gauge and keep an accurate record of precipitation for a period of one month.

(4) Keep a record of barometric pressure using a barometer and a procedure similar to that given above for temperature records.

(5) Visit a local weather station and interview the meteorologist regarding his work.

b. Geology. Perform one or more of the following:

(1) Make a collection of the rocks from your community. Identify the minerals present in each rock. Place the rocks and a description of the minerals which they contain on display in your classroom. (Refer to a general science book and books on minerals.)

(2) If there is an oil well being drilled nearby, visit it and inquire about the problems encountered in drilling a well. Specifically, discuss the kinds of earth formations that must be drilled through. Write a one-page summary of what the earth's structure beneath the well is apparently like.

c. Soils.

(1) Contact the local Soil Conservation Service and arrange for a staff member to visit your school and explain what a soil conservationist does.

(2) Collect samples of sand, clay, and silt. Determine how these compare with the soil normally found in your community. Make a display in which you describe the water-holding capacity, tilling, and productivity of soils high in sand, clay, and silt. List the crops which will grow best on each kind of soil.

(3) Collect a soil sample from the lawn or garden at your home or from the school ground. Use a soil test kit to analyze the soil; determine the kind of fertilizer that should be added for plants growing where you took the sample. (Obtain information on how to take a soil sample from a vocational agriculture teacher, county agent, or soil conservation service worker.)

13. Select and conduct one or more of the following activities which relate to physical science.

a. Astronomy.

(1) Construct a time-zone map of the United States showing the five time zones as found in the continental United States. Indicate what the time in each of the zones would be if it were 8:00 in your home town. (Consult general science or geography books if necessary.)

(2) Use a globe and a light bulb to show how the rotation of the earth causes night and day.

(a) Darken the room.

(b) Place a small light bulb in the center of the table.

(c) Turn the light on.

(d) Hold the globe so that the light shines directly on the equator with the axis of the globe perpendicular to the top of the table. Rotate the globe on its axis. The part of the globe that is lighted by the bulb is the part that would be lighted by the sun. Note how the daylight is distributed.

(e) Tilt the globe so that its axis is inclined at an angle of 23½ degrees. (This is the true position of the earth relative to the sun.) Rotate the globe. How does tilting the globe affect the distribution of light? How does tilting the globe affect seasonal changes in the weather? Refer to general science books if necessary.

(f) Write a one-page technical report of your procedure and observations.

(3) View one or more of the following motion pictures:

The Earth: Its Movements
The Earth: Its Atmosphere
The Solar System
Space Science: Comets, Meteors, and Planetoids
Space Science: The Planets
Space Science: Studying the Stars
Space Science: Man-Made Satellites

All of the above films are available from: Coronet Films
Chicago, Illinois 60601

b. Physics.

(1) Arrange for a physicist employed by a nearby college, university, industry, or government agency to visit class and discuss "What it is like to be a physicist."

(2) Arrange for a tour of the physics laboratory of a nearby college, university, industry or government agency.

(3) It is necessary for a physicist to measure length, mass or weight, and time precisely. Also, it is often necessary to convert from one system to another of measurement. As an exercise in measurement and conversion, perform the following (consult a physics book if necessary):

   (a) Measure the length and width of this page in inches.

   (b) Convert the measurements obtained in inches to centimeters. (one inch=2.54 centimeters)

   (c) Compute the number of square centimeters on the surface of this page.

(4) A floating body displaces an amount of liquid in which it is floating equivalent to its own weight. Conduct an experiment to prove that this is true.

   (a) Balance an overflow can on platform scales.

   (b) Fill the can with water until it is overflowing.

   (c) After the overflow can has been filled and has finished overflowing, place a dish or beaker to catch additional water that may overflow if more water is poured into the overflow can.

   (d) Place a small block of wood in the water in the overflow can. The amount of water that was forced out is equal to the weight of the block of wood.

   (e) Weigh the block of wood and the water that was forced out to see that they are equal.

c. Chemistry.

(1) Use a soil testing kit and take a soil sample and conduct a chemical analysis to determine the fertilizer needed and pH of the soil.

(2) Arrange for a visit to a nearby chemical laboratory located in a college, university, industry, or government agency. Discuss the laboratory and the nature of the work that is performed there.

(3) A compound is a pure substance which may be broken down into two or more simpler substances, known as elements. More than one hundred elements have been identified. Develop a list of these elements, the symbols for them, and the compounds in which the elements are commonly found. (Consult a chemistry or general science book.)

(4) Oxygen is necessary for a flame (fire) to exist. Perform the following experiment to illustrate how oxygen supports combustion:

   (a) Place a small candle upright on a table top.

   (b) Light the candle.

   (c) Fill a quart fruit jar with oxygen. (If this is done in a shop, be sure that oxygen alone is being obtained.)

   (d) Place a cover over the fruit jar to prevent the loss of oxygen.

   (e) Place the fruit jar upside down over the lighted candle. Note what happens.

   (f) Write a one-page summary of your procedure and what you observed. (Refer to chemistry or general science books for assistance in explaining what happened.)

14. Select and conduct one or more of the following activities which relate to mathematics:

a. Invite a mathematician from a nearby college, university, or business to visit class and discuss the occupations available in mathematics.

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b. Tour a business which makes use of electronic computers. Have a representative of the business explain the operation of the computers and the education necessary to become proficient in using such equipment.

c. Become familiar with the operation of a calculating machine and an electronic calculator. Perform these manipulations:

  (1) Add.
  (2) Subtract.
  (3) Multiply.
  (4) Divide.
  (5) Accumulate.
  (6) Multiply using a constant (or memory recall).
  (7) Set decimal position.

15. Select and conduct one or more of the following which relate to social science.

a. Anthropology.

  (1) Visit a museum in which fossils, artifacts, and relics are on display. Have a tour-guide show you around.

  (2) Read one or more of the following:

Folkways by William Graham Sumner
Maori Youth by David P. Ausubel
Elmtown's Youth by August Hollingshead
Children of Brasstown by Celia B. Stendler

b. Political Science.

  (1) Arrange for a tour of a local newspaper's printing facilities. Talk with various staff members. Also discuss the various news wire services.

  (2) Write an article for your school newspaper, or local community newspaper. Contact the editor of the paper for suggestions as to style and length of article. Have your article published.

XIII. Exploring General Cultural Occupations

Some occupations are concerned with how man has lived and lives now. People in these occupations may be interested in the activities, beliefs, possessions, and values of others. Just as past generations have influenced us, what we do and how we live affects future generations. Perhaps you are interested in an occupation that helps us continue to learn about people.

The following questions about General Cultural occupations will be discusses:

1. **What occupations are in the General Cultural Group?**
2. **How important are General Cultural occupations?**
3. **What is the nature of General Cultural occupations?**
4. **What education or training is desirable for success in General Cultural occupations?**
5. **Where is employment in General Cultural occupations found?**
6. **What is the outlook for General Cultural occupations?**

1. What occupations are in the General Cultural Group?

General Cultural occupations are concerned with maintaining cultural traits and passing them from generation to generation. Educators, journalists, ministers, and others are in this Group. These people teach and write about the way people live and behave. Their methods are patterned after the way in which they were taught. Attitudes about culture and cultural traits are thus picked up by each successive generation.

Examples of General Cultural occupations are listed below:

Level 1

Economist, university—guides students in learning the principles and methods of economics, and frequently engages in writing, lecturing, or consulting activities; does research in economic theory and formulates many of the new ideas that directly or indirectly influence government and industry planning.

Editor, large newspaper—directs the publishing of newspaper; writes editorials; and coordinates advertising, circulation, and production activities.

Lawyer—advises people of their legal rights and obligations and, when necessary, represents them in courts of law. (Also known as "attorney.")

Level 2

Clergyman, Protestant—leads in worship services and administers the rites of baptism, confirmation, and Holy Communion; prepares and delivers sermons and gives other talks; instructs people who are received into membership of the church, performs marriages and conducts funerals; counsels individuals who seek guidance, visits the sick and shut-in; comforts those who are bereaved, and serves church members in many other ways.

Geographer, political—studies the way political processes affect geographic boundaries on subnational, national, and international scales, and also the relationship of geographic conditions to political situations.

Geographer, urban—studies the geography and helps develop comprehensive plans and programs for utilization of land and physical facilities of cities, counties, and metropolitan areas.

Historian—studies the records of the past and writes books and articles that describe and analyze past events, institutions, ideas, and people.

Home economist, high school teacher—conducts courses in food, nutrition, clothing, textiles, child care, family relations, home furnishings and equipment, household economics, and home management; sponsors FHA chapters, and conducts many related activities.

Librarian, acquisition—purchases books and other library materials recommended by staff members, keeps a well-balanced library in quantity and quality, makes sure the library receives what is ordered, and maintains close contact with book jobbers and publishers.

Librarian, cataloger—classifies books under various subjects and otherwise describes them so they may be located through catalogs on cards or in other forms.

Librarian, college—works with students, faculty members, and research workers in general reference work or in a particular field of interest, such as law, medicine, economics, or music.

Librarian, public—serves all kinds of readers—children, students, teachers, research workers, and others; provides special materials and services to culturally and educationally deprived people; records and makes information available; selects and organizes collections of books, pamphlets, manuscripts, periodicals, clippings, and reports, and assists readers in their use.

Librarian, reference—aids readers in their search for information, answers specific questions or suggests sources of information.

Librarian, school—instructs students in the use of the library and visits classrooms to familiarize students with library materials relating to the subjects being taught; works with teachers and school supervisors who plan the curriculum; prepares lists of printed and audio-visual materials on certain subjects; meets with faculty members to select materials for school programs; and selects, orders, and organizes library materials.

Librarian, special—works in libraries maintained by commercial and industrial firms, such as pharmaceutical companies, banks, advertising agencies, professional and trade associations, government agencies, and other types of organizations such as hospitals and museums; plans, acquires, organizes, and catalogs materials, and retrieves information from these resources about subjects of special interest to the organization.

Political scientist—studies the government—what it is, what it does, how and why; is interested in government at every level—local, county state, regional, national, and international.

Priest—attends to the spiritual, moral, and educational needs of the members of his church; offers the Sacrifice of the Mass, hears confessions, administers the sacraments (including the sacrament of marriage); visits and comforts the sick and bereaved, conducts funeral services, counsels those in need of guidance, assists the poor, and gives religious instruction.

Rabbi—conducts services on the Sabbath and on holidays; prepares and delivers sermons, performs wedding ceremonies, visits the sick, conducts funeral services, comforts the bereaved, helps the poor, supervises religious education programs, engages in interfaith activities, assumes community responsibilities, and counsels individuals.

Sociologist—studies the many groups which man forms—families, tribes, communities and states, and a great variety of social, religious, political, business, and other organizations which have arisen out of living together.

Teacher, elementary—teaches children several subjects including reading, writing, and arithmetic, and supervises various activities, such as lunch and play periods.

Teacher, kindergarten—conducts a program of education for young children; exposes children to experiences in play, music, art work, stories, and poetry; introduces them to science, numbers, language, and social studies.

Urban planner—develops comprehensive plans and programs for the overall growth and improvement of urban communities; analyzes alternatives and proposes methods for achieving an efficient and attractive community within the framework of a community's policies and goals; visualizes future conditions in light of the trends in population growth and social and economic change; estimates the community's long-range needs for land, housing, community facilities, transportation, recreation, business, and industry.

Level 3

Law clerk—studies legal records and documents to obtain data; prepares written documents, and performs other routine activities of a law firm.

Radio or TV announcer, broadcasting—presents news and live commercial messages, introduces programs, describes sporting events, acts as master of ceremonies, conducts interviews, and identifies stations; operates the control board, sells time, and writes scripts and news copy (in small stations); acts as disc jockey, introduces selections of recorded music and comments on the music and other matters of interest to the audience.

Level 4, 5, and 6—no occupations listed.

2. *How important are General Cultural occupations?*

The General Cultural Group is composed of important occupations. These occupations have considerable influence on the lives of many people. Some specific examples to illustrate this importance are given below.

Perhaps the most significant occupation is that of teaching. It is the largest of all professions. More than 2.7 million people are teachers. "Teaching" includes all of those who are engaged in the education process, including school administrators, supervisors, counselors, and the like.

Teachers have a very important influence upon the lives of young people. Kindergarten and elementary teachers often fill a parental role. They are responsible for providing meaningful and rewarding educational experiences for children. Secondary teachers also play a vital part in determining the direction and future of the lives of young people. It is up to the secondary teacher to see that interest is maintained in school work. To do this, the teacher must be well prepared for each day's instruction, be enthusiastic about teaching, and be able to convince the student of the necessity of being prepared to face the future.

Radio Announcer at Work. (Courtesy WJDX/WLBT, Jackson, Mississippi.)

A clergyman serves the spiritual needs of others, leads them in religious activities, and helps or comforts them in time of sorrow and stress. He, by his teachings and through his living example, leads others in formulating their beliefs and practices in relation to their God.

The overall growth and improvement of a community are often influenced by the plans and programs that have been developed by an urban planner. He estimates a community's long-range needs for land, housing, community facilities, transportation, recreation, business, and industry and then goes about getting his estimates and plans changed into realities.

3. *What is the nature of General Cultural occupations?*

The nature of General Cultural occupations varies from one to another. However, they are all concerned with the preservation and transmission of the general cultural heritage.

A clergyman's title and responsibilities vary according to his religion and beliefs, congregation size, and other factors. Most clergymen lead congregations in worship services and administer the rites of baptism, confirmation, Holy Communion, and marriage. Visiting the sick, conducting funeral services, comforting the bereaved, counseling those in need of guidance, and helping the poor are a few of the other duties of the clergy. Often a religious vocation leads one into home missions' work or even into other countries as a foreign missionary.

The nature of teaching varies from elementary school to high school. Kindergarten and lower elementary grade teachers must usually teach a variety of subjects. They may teach music, play, art, reading, science, numbers, language, and social studies. In some schools, especially in the upper elementary grades, a teacher may teach one subject area to several groups of students. The primary responsibility is teaching, but other duties may be part of the work. Examples of other duties include supervising students during lunch and play periods.

Secondary teachers usually specialize in one subject area and may teach several classes in this area. For example, a science teacher may teach courses in biology and chemistry. In addition, teachers may be responsible for supervising club activities or study hall. Teachers are frequently called upon to work after hours at school events such as ball games and band concerts.

A college or university teacher spends approximately 12 to 15 hours a week in classroom instruction. He also serves as an advisor to students majoring in his particular subject area, and, in most cases, is expected to write books and articles for journals, and to engage in research. Some college and university instructors teach night classes and extension courses and may be involved in giving correspondence instruction to persons living off campus. Other duties may involve sponsoring a club, serving on committees, and the like.

A good librarian knows the kinds of materials needed by people who use the library. This means that a librarian must evaluate books and other materials and select those most appropriate for the users of the library. In addition to selecting materials, a librarian must also see that they are purchased and properly cataloged. It is also the responsibility of librarians to publicize the services available through the library.

4. What education or training is desirable for success in General Cultural occupations?

General Cultural occupations generally require a rather high level of education. In fact, most of them require at least a bachelor's degree. Some of them require a master's degree or doctor's degree. A good example is an economist. To become a university-level economist, one is usually required to have a master's or doctor's degree, with a major in economics. A thorough grounding in economic theory, economic history, and methods of economic analysis are necessary if one is to do research and formulate policies that will influence government and industry planning. Many universities are also placing much emphasis on the importance of mathematical methods of economic analysis. A college instructor usually is required to have a master's degree in economics, but to acquire a professorship, it is necessary to get a doctor's degree. Students with good undergraduate records may be awarded a graduate assistantship to a college or university to work toward a master's degree. Graduate work should be planned if one wishes to compete for a responsible position in a college or university.

Attorneys must be admitted to the bar in the state where they plan to enter the practice of law. Being admitted to the bar usually involves passing a written examination. Some states, however, do not require this of graduates of law schools in the state. Before an individual can qualify for a bar examination, he must complete three years of college and must graduate from a law school approved by the American Bar Association or the proper state authorities. Training, or study in a law office, will, in some states, substitute for part of or all of the study in a law school. In a number of states the State Board of Examiners has to approve students entering law school or during the first few years of their legal study. It usually takes a minimum of seven years after high school to complete the required college and law school study. Advanced study should be planned if one wishes to specialize in a particular branch of law or to teach in a law school.

Many high school librarians have received only a bachelor's degree in library science. One planning to teach or to become an administrator should obtain an advanced degree. A special librarian should be knowledgeable in the subject area of his specialty. Some librarians have to know foreign languages. Usually, school librarians are certified by the state in which they plan to work.

A master's degree is usually the minimum required for employment as a sociologist. As in most occupations, advancement comes with experience and advanced training. Beginning jobs in the areas of interviewer, research assistant, caseworker, counselor, recreation worker, and administrative assistant in public or private welfare agencies are available to beginning workers with only a bachelor's degree.

The type of education and training required to enter the clergy is determined by the various religious groups served. Educational preparation ranges from no formal education at all to different amounts of training in liberal arts colleges, Bible colleges, or Bible institutes. Many Protestant denominations now require three years of study in a theological seminary after college graduation.

A person who wishes to be a rabbi must meet the requirements established by the Jewish laws. He must complete a prescribed course of study at a Jewish theological seminary before being ordained; such training may require from three to six years.

At least eight years of study after graduation from high school are necessary to become a priest. Priests are required by the Catholic Church to continue training after being ordained.

All states require teachers in the public schools to have teaching certificates. Most states issue regular teaching certificates only to those who have had four years of college study. In addition, certain prescribed courses must be part of the college work. In case of a shortage of qualified teachers, temporary teaching certificates may be issued to persons who can meet partial requirements. Teachers must have temporary certificates renewed every year until the requirements for regular certification have been met. Advancement for teachers into supervisory or administrative positions comes as a result of experience, additional education, or a move to another school system.

5. Where is employment in General Cultural occupations found?

Employment in General Cultural occupations can be found in most cities, towns, villages, and rural areas. A large number of those engaging in these occupations are employed by colleges and universities, and by federal, state, and local government agencies. A small number of persons in these occupations are self-employed.

The job opportunities available in teaching depend on the level and subject area for which the teacher is trained. Elementary schools usually have a number of vacancies each year. This means that a qualified teacher can find employment in almost any location. More opportunities in teaching are available in large urban areas. High schools are not as numerous in some areas as elementary schools, but are usually larger in size. Some counties, especially in Mississippi, have closed smaller schools and formed larger, consolidated schools.

Occupations in the ministry are found in most towns and communities. Of the 240,000 Protestant ministers, most are associated with the Baptist, Methodist, Lutheran, and Presbyterian churches. Ministers may serve individual congregations or as missionaries, chaplains in the Armed Forces, in hospitals or other institutions, or instructors in colleges and universities. Some are even employed as social workers.

The states of New York, California, Pennsylvania, New Jersey, Illinois, and Massachusetts have the majority of the Jewish population. Therefore, most rabbis serve in these states. Rabbis also serve Jewish people throughout the United States. The work of rabbis is similar to that of Protestant clergymen.

Most cities and towns and many rural communities have a Catholic church or churches. The majority of Catholics are found in the Northeast and Great Lakes regions, California, Texas, Louisiana, and other heavily populated areas. Priests also serve in capacities similar to Protestant ministers.

About 85 percent of the historians in our country are employed by colleges and universities. Of the 10,000 persons employed as historians, about ten percent are located in agencies of the federal government, primarily in Washington, D.C., and serve as archivists or in related occupational areas. Opportunities for a career as a historian are generally found in locations large enough to have a college, university, museum, or library with adequate facilities for research.

Most librarians work in towns or cities. A large number are employed by elementary and secondary schools, colleges and universities, and governmental agencies. Some librarians work with bookmobile units which provide services to less densely populated areas.

6. What is the outlook for General Cultural occupations?

Employment opportunities will steadily increase in the majority of occupations in the General Cultural Group. In some occupations the increase will be moderate, while in others it will be more rapid. Many employees will be needed to fill positions which become vacant as a result of deaths, retirements, and transfers to other fields of work.

Political and urban geographers will find an increase in employment in government agencies. Even though geography is a small field, well-qualified geographers should have no difficulty in finding employment.

The next few years may show some increase in the employment opportunities for historians. History teachers and archivists will have the greatest opportunities, but there will be only a slight increase in positions for other types of historians. Educational preparation will be important in securing a job. Positions as professional historians will be very difficult to locate for those with only a bachelor's degree. Some history teachers may have difficulty obtaining employment because of the large number of persons entering the occupation.

The quality of the law school attended and the scholastic rating of the individual will greatly influence a lawyer's prospects in the future. Those with higher scholastic ratings and from recognized schools of law will obtain, with less difficulty, positions with good salaries. A slight decline in the number of lawyers going into private practice may occur.

Opportunities for employment in library science will be favorable during the next few years. Excellent job openings will be available to those who are well qualified. Some of the best employment opportunities will be located in college and university libraries, school libraries, and special libraries.

Political scientists will find the largest growth in employment opportunities to be in colleges and universities. However, the amount of education one has will affect his chances of securing certain positions. There will not be a very large growth of openings for political scientists in private industries.

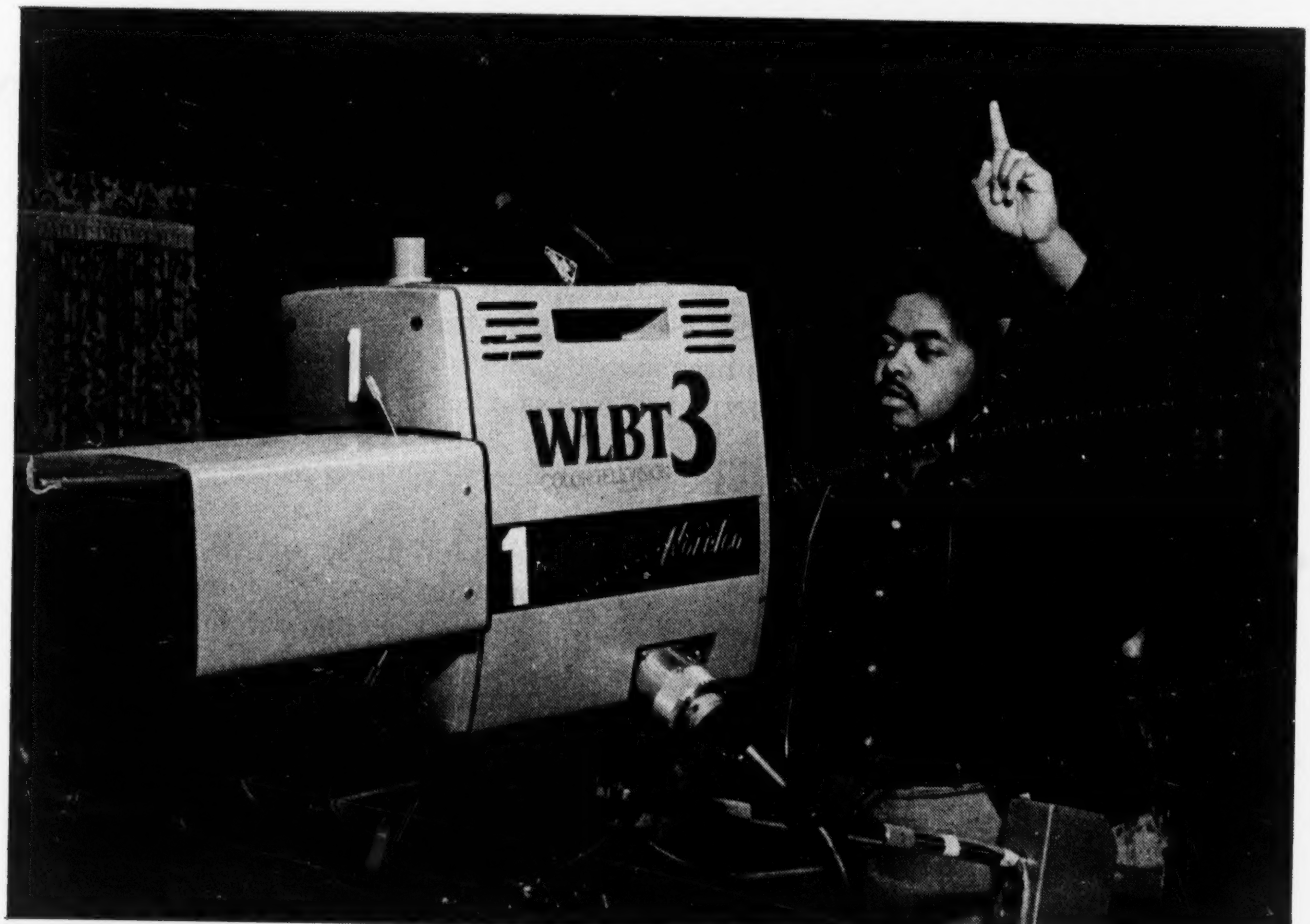
Job openings for sociologists will be greatest in institutions of higher learning. More jobs will be available to those who have had training in methods of research and advanced statistics. Without a master's degree and experience or a doctor's degree, one will find keen competition in securing employment as a professional sociologist.

Since there is an expected growth in the population and in the number of church congregations, there will continue to be a demand for clergymen. Many Protestant, Catholic, and Jewish congregations have not been able to secure full-time ordained clergymen to guide them in their religious activities.

During the past few years there has been an increase in the number of persons who have entered teaching. For this reason the demand for teachers has lessened somewhat and schools have begun to place more emphasis on a potential teacher's educational and scholastic achievement. New graduates may find competition to be greater, but the well-qualified teacher will usually find a teaching position.

The employment outlook for urban planners during the next decade is expected to be very good. As in most occupations, the well-qualified person will have less trouble securing employment.

There will be a moderate increase in the jobs available to radio and television announcers during the next ten years. Jobs will be more numerous in the radio industry because of the larger number of radio stations. However, automatic programming will be used more widely, thus cutting down on the number of jobs that will become available. Competition will be great in this field because of the attraction it has for young people.



A Television Cameraman at Work. (Courtesy WJDX/WLBT, Jackson, Mississippi.)

Review Questions:

1. What is the major concern of General Cultural occupations?
2. Why are the occupations in this Group considered important?
3. What level of education is the minimum for most General Cultural occupations?
4. What is the occupation of the largest groups of professional workers?

Suggested Activities:

1. Review various occupational information materials. Carefully note all occupations which are in the General Cultural Group. List occupations other than those given in this publication which you believe are in the General Cultural Group.

2. Select one or more occupations in the General Cultural Group in which you are interested. Determine the following information for each occupation: (Your teacher may have prepared some forms for your use.)

OCCUPATIONAL STUDY OUTLINE

A. *Name of Occupation:*

B. *Duties of the Occupation:*

C. *Qualifications:* What are the personal requirements?

D. *Age:* How old must I be to enter the occupation?

E. *Sex:* Is this an occupation in which others of my sex are normally employed?

F. *Specific Physical and Health Requirements:* Am I the correct height to do the work? Are my eyesight and hearing adequate? Am I strong enough?

G. *Interest:* Do I possess this interest? If not, could I develop interest in this type of work?

H. *Abilities:* Do I possess the required abilities? If not, could I acquire the knowledge and skills necessary to do the job?

I. *Personality:* Do I possess the personal qualities necessary for doing this type of work? If not, could I develop these qualities?

J. *Values and Attitudes:* Does anything about this job violate values and attitudes I have about people and work? If so, could I adjust to situations that required that I change my values and attitudes?

K. *Preparation:* What subjects do I need to study? What special training will I need? How long will it take to receive this training? How much will it cost? Can I get this training within the state? Is work experience required for entry into this occupation? What is the method of entry into this occupation?

L. *Working Conditions on the Job:* Is it hazardous work? Is it noisy or dirty? Will I be working in shifts? Will I work indoors or outdoors? Is it hard work? Does the work require being away from home for long periods of time?

M. *Rewards from Work:* How much is the beginning pay? Is there chance for advancement? Will this work experience help me get a better job? Would I be happy doing this type of work?

N. *Employment Outlook:* How many are employed in the occupation at present? Are there employment opportunities in my community or state for this type of work?

O. *Special Requirements (such as certification, licenses, and examinations):*

3. Invite someone who is employed in a General Cultural occupation to visit your class and discuss the nature of his work.

4. Develop a display, bulletin board, or poster depicting occupations in the General Cultural Group. Obtain pictures from magazines or newspapers which show workers in General Cultural occupations.

5. Review the want ads of a newspaper. Cut out those ads for jobs in the General Cultural Group and place them on a poster or bulletin board. Note where they are found, the rate of pay, and requirements for entry.

6. Review the yellow pages of the local telephone directory. Make a list of all businesses which might have General Cultural occupations.

7. Compile a list of all the persons you know who work in General Cultural occupations. Also indicate their occupations and employers.

8. Invite a history teacher or librarian to visit class. Have him discuss General Cultural occupations that are related to history or library occupations. It would also be well to have him discuss how enrolling in certain classes can help provide the training needed for entering various occupations.

9. Visit the library in your school. Have the librarian explain the facilities found there. (It is suggested that arrangements for the visit be made well ahead of the visit.)

10. As the class members name the local businesses and government agencies that employ people in General Cultural occupations, write the names on a chalkboard. Ask if any members of the class know people employed at these places.

11. Conduct one or more of the following activities concerning religious occupations:
    a. Arrange for an interview with a clergyman. Tell him that you want to learn about his work and what it involves. Ask questions about such things as education, pay, and hours of work.
    b. Become familiar with the basic beliefs of a religion. Ask the minister, priest, or rabbi to help you locate information.
    c. Become active in a church. Ask the clergyman to give you some church duties to perform.
    d. Go with a clergyman to visit a sick person or a shut-in.
    e. If a devotional period is conducted at your school, prepare and give the devotional message. Use the intercom or present the devotional to a group.

12. Conduct one or more of the following activities related to library occupations:
    a. Arrange for an interview with a person in a library occupation in which you have an interest. Prior to the interview, prepare a list of questions you would like to have answered during the interview, such as the duties and how this person became interested in a library occupation. Present the list of questions to your teacher for approval. Read any information you can find on interviewing techniques, proper dress for an interview, etc.
    b. Learn the major divisions of the Dewey Decimal System. The school librarian or the English teacher can provide you with this information.

c. Ask the school librarian to explain the use of the card catalog, and then study its contents carefully.

d. Become familiar with the content, function, and use of the *Reader's Guide to Periodical Literature.* The librarian or English teacher can assist you in this activity.

e. Learn the meaning of all the coding on a book. The school librarian can assist you.

f. Prepare a bibliography of all the reference materials in the occupational orientation classroom that are concerned with the occupation of librarian. Refer to your English textbook for the correct procedure to use in preparing a bibliography.

g. Interview your school librarian to find the procedure followed to order books. Secure an order form and practice filling it in.

h. Using 3-inch x 5-inch cards, prepare several examples of library cards with titles and codes (Dewey Decimal System, Library of Congress, etc.) which are used in the card catalog. File these in proper sequence in a small box. Ask the librarian to check your work for accuracy.

13. Conduct one or more of the following activities: (These activities are for the occupations of historian, geographer, political scientist, sociologist, and economist.)

    a. Arrange for an interview with a person in the specific occupation in which you have an interest. (Follow the proper procedure for conducting the interview.)

    b. Activities for history occupations:

        (1) Prepare a paper that describes the influence of the Smith-Hughes Act on the development of vocational education.

        (2) Trace the genealogy of your family for as many generations as possible. Include names, dates of birth and death, etc.

    c. Activities for geography occupations:

        (1) On a piece of posterboard, draw a diagram illustrating the political organization of your county government. Be prepared to explain the diagram to your classmates. The government teacher in your high school should be able to help you with this project or give you suggestions as to where you may get such assistance.

        (2) Sketch the state map showing county boundary lines. Obtain a record of which counties voted for certain candidates in the last governor's election. (This information can usually be obtained from the local newspaper office.) Indicate on the map by writing inside the county boundary lines the last name of the candidate who "carried" each county. A different color might be used for each candidate.

    d. Activities for political science occupations:

        (1) Prepare a paper comparing the government of the United States with that of the Soviet Union. Using the information in your paper, give a five-minute talk to your classmates on your comparison study.

        (2) Conduct an opinion poll on whether the President of the United States should continue to be elected by the electoral college or be elected by popular vote (majority vote of the population). Prepare an interview sheet and present it to your teacher for approval. Interview approximately twenty-five people in your town. (Be sure to explain to them the purpose of your interview.) Compile your information and report your findings to the class.

    e. Activities for sociology occupations:

        (1) Prepare a paper on the origin, development, purpose, and functions of your county welfare department. Give a three-minute speech to your classmates summarizing your paper.

(2) Observe one of the leaders in your school and try to determine why he is a leader. Note how his behavior influences group behavior. Ask individual students to state the characteristics this person (leader) has which make him a leader. Write a paper summarizing your study.

f. Activities for economics occupations:

(1) Become familiar with the meaning of the term "gross national product" (GNP) and its importance to an economist. Prepare a graph on posterboard to illustrate the rise in our GNP. Explain the graph to your classmates.

(2) Become familiar with the "law of supply and demand" and the "law of diminishing returns." Explain these laws to your classmates by illustrating each on the chalkboard or by other means.

g. Activities for urban geography occupations:

(1) Plan and develop a sketch of a shopping center which would fit the needs of your city, town, or community. Take a survey to determine the types of business that should be located in the center. Interview about twenty-five citizens to get their reactions to the types of business needed.

(2) Obtain a map of your community, town, or city, or one nearby. Using colored pencils or crayons, color the residential sections blue, the business districts red, and the industrial districts green. Display the map on the bulletin board in your classroom.

14. Conduct one or more of the following activities concerning occupations in teaching:

a. Arrange for an interview with a person in the specific teaching occupation in which you have an interest.

b. After choosing a particular topic which relates to your selected teaching area (for example, "Gross National Product" for an economics teacher; "Parts of a Business Letter" for a typewriting teacher; "The Color Wheel" for a home economics teacher; "Basic Addition" for an elementary teacher, etc.), prepare a fifteen-minute teaching plan. You will be given the time needed to present or teach the topic to your classmates. Begin the class by checking the role as your teachers do each day.

c. Prepare a short examination (about five questions) that will test your classmates' comprehension of the topic you taught. Grade the test and return it to your "students."

d. Attend a PTA meeting with your parents.

15. Perform one or more of the following activities which are concerned with the occupation of lawyer:

a. Prepare a will for yourself. The business teacher in your school should be able to supply you with a book which illustrates a will. Business law books usually have such an illustration. Present the finished copy of your will to the occupational orientation and business teachers for their approval.

b. Prepare a report on the laws relating to the issuance of "bad checks." In the report include the following information: circumstances existing when the issuance of "bad checks" is not a crime, the criminal liability, how a notice of dishonor is presented, punishment for issuance of "bad checks," etc.

c. Visit a courtroom and observe a court proceeding.

d. Give an oral presentation about the functions of a state supreme court, a county, circuit, superior, or district court, and a justice of the peace court.

e. Give an oral presentation in which you tell how a case is tried in a courtroom.

16. Conduct the following activities related to radio and television announcing:

    a. Prepare a five-minute script that relates the purpose, methods used in teaching, and other pertinent information regarding occupational orientation. With the school's intercom system on only in your classroom, present the script to your classmates.

    b. Choose a product and prepare a one-minute commercial for it. Present the commercial to your teacher for approval. Give the commercial in front of your classmates and then ask for their constructive criticism.

XIV. Exploring Arts And Entertainment Occupations

Some people like to entertain others. Young people who have special skills may find an Arts and Entertainment occupation in which they are interested. The areas in this Group include music, painting, dancing, and various performing occupations. Of special interest to boys is the fact that professional athletes are included here.

The following questions about Arts and Entertainment occupations will be answered:

1. **What occupations are in the Arts and Entertainment Group?**
2. **What is the nature of Arts and Entertainment occupations?**
3. **How important are Arts and Entertainment occupations?**
4. **Where are Arts and Entertainment occupations found?**
5. **What education or training is desirable for success in Arts and Entertainment occupations?**
6. **What is the outlook for Arts and Entertainment occupations?**

1. What occupations are in the Arts and Entertainment Group?

The Arts and Entertainment Group does not contain a large number of occupations. However, it does contain some occupations which can be very profitable to persons in them. Most people like to participate in certain aspects of Arts and Entertainment occupations as recreation. For example, high schools have musical groups, athletic contests, art departments, school newspapers, and social functions. Many of these high school activities contain elements of Arts and Entertainment occupations.

Examples of occupations in this Group are listed below:

Level 1

Architect—plans and designs private homes, office buildings, hospitals, schools, factories, and other structures; organizes materials and equipment necessary to meet specifications; talks with the customers and plans layout and cost of the structure; prepares sketches, drawings, and specifications for the building contractor and construction workers.

Level 2

Accountant, executive, advertising—handles relations between an advertising agency and its clients; develops an advertising campaign and applies the program to the client's needs.

Actor—portrays various characterizations to audience by use of gestures, speech, song, and/or dance.

Actress—(See Actor)

Art director—supervises, directs, and participates in work related to the design of sets, scenic effects, and costumes.

Athletic coach, college—analyzes the performance of players and instructs them in areas of weakness to develop teams for sports competition; demonstrates the techniques of the game to the players in order to improve their skills.

Dancer—performs classical, modern, or acrobatic dances, alone or with a partner or group to entertain people; times body movements and facial expressions to express the theme of the dance.

Designer, apparel—creates original designs for new types and styles of apparel (such as suits, dresses, wraps, etc.).

Designer, industrial—designs many products such as furniture, lamps, cars, household appliances, and aircraft; takes into consideration price, appearance, customer wants and needs, and methods of production; supervises the development of design sketches into working drawings, specifications, and models.

Musician, instrumental—plays one or more musical instruments alone or with others; manipulates keys, valves, strings, or percussion devices, depending upon the type of instrument being played.

Research director, advertising—directs workers engaged in preparation of advertising and publicity programs and materials; processes and analyzes information gathered by assistants.

Singer—gives expression to harmony, melody, and rhythm of music by means of voice.

Teacher, art—instructs pupils in art, such as painting, sketching, designing, and sculpturing; demonstrates methods and procedures, and observes pupils to make criticisms and corrections.

Level 3

Artist, advertising (display artist)—draws, paints, or sketches backgrounds and other fixtures made of paper, cardboard, wallboard, plaster, canvas, or wood used in exterior or interior displays.

Copywriter, advertising—consults with the account executive, newspaper, radio and television representatives, and marketing representatives about a product or service that is to be advertised; writes original advertisement copy for newspapers, magazines, and billboards; writes scripts for radio and television advertising.

Decorator-designer, interior—designs and plans artistic interior furniture, lighting fixtures, pictures, draperies, and walls of homes, hotels, ships, hospitals, and other establishments; directs workers painting walls, laying carpets, arranging furniture, etc.

Layout man, advertising—designs layouts for newspaper, magazine, television, poster, direct mail, and billboard advertisements; uses sketches, illustrations, and photographs provided by the customer to develop the layout.

Model—models garments such as dresses, coats, underclothing, swimwear, and suits for garment designers, buyers, sales personnel, and customers.

Photographer, commercial—photographs persons, merchandise, buildings, machinery, and fashions to be used in advertising and selling; loads film, adjusts camera, and develops prints.

Professional athlete—engages in one sport such as football, basketball, tennis, golf, or track as a means of livelihood.

Level 4

Delineator-renderer—makes artistic drawings of buildings and manufactured products for display and use in advertising.

Floral designer—designs and fashions natural and artificial flowers and foliage; uses wires, pins, and tape to arrange and fit corsages, sprays, wreaths, centerpieces, and other designs for weddings, balls, dances, church services, and funerals.

Letterer—paints or draws precise lettering to be reproduced in books, advertisements, and other printed materials.

Paste-up man—photographs prepared advertisement copy, develops photographic negatives, and arranges and mounts illustrations and printed legends on paper according to an artist's layout; uses a ruler, drafting instruments, scissors and a knife to arrange, cut, and fit materials.

Level 5

Stagehand—handles props, curtains, and electrical equipment in a theater.

Level 6—no occupations are listed.

2. *What is the nature of Arts and Entertainment occupations?*

Several occupations in this Group are related to advertising. People in advertising plan and prepare advertisements for such products as cars, stoves, refrigerators, clothing, and office equipment. They also plan and prepare advertisements characterizing services rendered by businesses such as insurance companies, restaurants, gas stations, and banks. These workers include researchers who find out what customers need and want and what advertisements appeal to those needs and wants, copywriters who write the text of the advertisements, artists who prepare the illustrations, and layout specialists who put copy and illustrations into the most attractive arrangements possible.

Work in the performing arts requires extensive practice. Actors, actresses, musicians, and dancers may be required to travel a great deal. It is usually hard and demanding work that requires special talent and involves many difficulties and uncertainties. Due to competition, only a small number of those engaged in such occupations achieve recognition as stars. This is particularly true of actors and actresses. Many struggle for a toehold in the profession.

The creative work of the architect, industrial designer, interior designer and decorator, and the renderer enhances the attractiveness of homes and other products. These people spend much time doing historical research, as well as contemporary information-gathering. They work with cost estimates, materials to be used, and other factors of design.

52,000
7,000
2.50
45-53
2.95
CHUTE

Workers in Advertising Occupations Preparing a Display. (Courtesy WJDX/WLBT, Jackson, Mississippi.)

Sports careers are not easy. In most sports activities a great deal of energy must be expended by the participants. Much practice and discipline are required before the actual events are conducted for spectators. Most sports are played on weekends and holidays when other persons are relaxing. The athletic coach must not only know the game, but be able to demonstrate the game to the players. The athletic director must have a broad knowledge of several sports and will be required to provide leadership in establishing a program of athletics for an institution and the community. Players, as well as coaches and directors, must be able to work with people.

Models could easily be classified with those in advertising occupations. They are important to clothing buyers and department stores in displaying new styles. The American garment industry has assumed world leadership in the production of clothing. Increasing numbers of models are needed to display clothing. At certain peaks of the fashion year a model may be on duty constantly in the showroom. During "slow" seasons, the model may act as a receptionist, do routine filing, and answer the telephone. Department store models may have regularly scheduled style shows. Many models work part-time for special shows, or for a certain buyer's showings.

The apparel designer plans how clothing is to be cut for factory production. He must understand the methods of production so that the garment can be efficiently produced. He must meet with retail buyers to determine consumer trends. Designers of clothing may travel to England, France, and other countries to observe styles.

3. *How important are Arts and Entertainment occupations?*

Advertising helps to create competition in the free enterprise system. One result of advertising is that people are made aware of the products and services available. Moreover, as the United States becomes more affluent and our population increases, people demand more goods and services. Only mass selling can distribute such a wide range of products and services to so many people. Advertising is the means that sellers use to interest buyers and customers. This is done through various media: store fronts and windows, newspapers and magazines, radio and television, direct mail, and outdoor advertising.

The advertising workers included here are principally responsible for the creative visual aspects of advertising. The end product of their work is visible in television, magazines, and other places. Approximately 250,000 people are employed in all types of advertising work.

Persons working in the performing arts provide a variety of entertainment. There are approximately 24,000 dancers and dancing teachers; 18,000 actors and actresses; 162,000 musicians and music teachers; and 59,000 singers and singing teachers. At the present time many work part-time in these occupations and work in other occupations as a principal means of livelihood.

Few people make their own clothing or that of their families, as was the case fifty years ago. Ready-made dresses are now produced in mass quantities and in many styles. The American people demand more clothing in many styles for every season of the year. Fewer than 20,000 designers create designs for the clothing of men, women, and children.

Increasing numbers of models are needed to display the many styles of clothing in style shows, in photographs in newspapers, catalogs, and magazines, and on posters and television.

Sports events, which involve one player or teams of players, provide a means for Americans to relax while watching others perform. The sports world is a vital element in our society. Many people have been brought from the ranks of the depressed to fame and glory as a result of participation in sports. Many minds have been molded as a result of sports competition. Many professional players have moved to jobs in the motion picture industry, radio, and television, and several have been elected to political offices. Many are presently employed as professional athletes, athletic coaches, and athletic directors.

4. *Where are Arts and Entertainment occupations found?*

Employment in advertising occupations is found primarily in advertising agencies, manufacturing companies, stores, and other organizations having products or services to sell. Many are employed by newspaper and magazine publishers, printers, and art studios.

Many actors and actresses are employed by stage and motion picture companies. Some are employed by "live" radio and television. The location of employment may depend upon the season of the year, and whether the work is with motion picture filming or on the stage. In the winter, most employment opportunities on the stage are in New York City. Stage actors may perform in resort theaters, or in community theaters throughout the nation. Employment opportunities in motion pictures and television are centered in Hollywood, New York, Miami, and a few other parts of the country.

Dancing teachers are employed in schools of dance and in schools and colleges located principally in large cities. Many dancers are performers on the stage, screen, and television. New York City, Los Angeles, San Francisco, Chicago, and Miami are the locations for most employment opportunities for dancers.

Most professional musicians and singers perform in New York, Chicago, and Los Angeles. Music teachers and singing teachers are employed in elementary and secondary schools, as well as in colleges and universities all over the country.

About two-fifths of the 32,000 registered architects are self-employed, practicing individually or with partners. Most of the others work for architectural firms with large construction programs. Some are employed by government agencies in such fields as community planning and urban redevelopment. A few teach in schools of architecture.

Most interior decorator-designers are employed with large department and furniture stores located in large cities. Some are employed with hotel and restaurant chains. Others are employed by architects, antique dealers, office furniture stores, industrial designers, furniture and textile manufacturers, or by periodicals that feature articles on home furnishings.

Most of the 10,000 industrial designers are employed by large manufacturing companies and by design-consulting firms. Some do free-lance work. A few work for architects.

Most professional athletes are employed by leagues or other organizations. Most work in and around large cities, traveling to and from these metropolitan areas to perform. Most athletic coaches and directors are employed in schools, colleges, universities, and other institutions.

Clothing styles change often, especially in women's clothing. Most clothing for women is designed by women. The major center for employment of designers is New York. Most fashion models are women. They are employed by large department stores and in other places where there are apparel showrooms. The designer in men's wear usually works closely with the factory producing the garment. The field of male modeling is highly competitive and difficult to enter.

5. *What education or training is desirable for success in Arts and Entertainment occupations?*

Most employers hiring advertising trainees prefer college graduates with liberal arts training, or majors in marketing, journalism, or business administration. However, many have been successful without such an educational background.

High school students planning to enter the advertising field should get experience by working for the school newspaper, annual, or other publications. Experience may be acquired through part-time jobs in selling, or by enrolling in distributive education classes. Many advertising companies recruit college graduates and train them on the job. Many young people begin their careers in advertising as mail clerks, messengers and runners, assistants in research or production work, and junior copywriters. Others begin as secretaries and in advertising departments in retail stores. Preparatory courses in high school for advertising careers consist of communications, social studies, sociology, psychology, and economics.

A college degree is becoming increasingly necessary for an acting career. Dramatic arts in college includes courses in liberal arts, speech, pantomime, play production and drama. Young people aspiring to acting careers need experience and should become involved with school plays and little theaters in the community.

Those aspiring to be dancers, dance teachers, musicians, music teachers, singers, or singing teachers should begin studying and receiving special instruction at an early age. A college education is an advantage in obtaining employment as a dance teacher or as a

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music or singing teacher. Employment as a special performer requires professional training for several years. To get experience, young people should seize every opportunity to perform.

A license is required for the practice of architecture. Requirements for a license include graduation from an accredited school, followed by three years of practical experience in an architect's office as a junior draftsman. Normally it takes a graduate several years to progress to chief draftsman, designer or other advanced positions, including establishing one's own practice. Students interested in careers in architecture should take subjects in mathematics, physics, chemistry, and economics.

Most employers require interior decorators and designers to have at least two or three years of formal art or interior decorating and design training. Many require a bachelor's degree with a major in interior design and decorating. New graduates may receive from one to three years of on-the-job training after being employed. Talented workers may advance rapidly if employed by larger firms.

The completion of a course of study in industrial design—in an art department of a university or a technical college—may adequately prepare one for entry into industrial design. The prescribed curriculum may take from two to five years of study leading to a diploma. New graduates usually start as assistants to more experienced designers. Entrance in the course of study requires a high school diploma. Preparatory courses in high school are science, mathematics, and mechanical drawing.

Those aspiring to be models should take every opportunity to model at the high school or home town stores and to enter beauty contests. Enrolling in the home economics class will give one the opportunity to learn good grooming habits, poise, and carriage. Most employers of fashion models prefer college graduates with good communication ability and a good general cultural background. Modeling and charm schools offer much of the training that is needed.

Fashion designing is very competitive work. A college degree is recommended, though not required. Some colleges offer a degree in fine arts with a major in fashion design that will prepare a person to begin as a fashion designer. Most start their careers as design assistants. Students may begin preparing for designing careers in high school by taking art courses, and by practicing sewing and making clothing. Summer jobs in department or specialty stores will give valuable experience.

Most professional athletes, athletic coaches, and athletic directors are college graduates, or have attended college for a while. Such education is usually not a requirement for employment as an athlete.

6. *What is the outlook for Arts and Entertainment occupations?*

The outlook in certain Arts and Entertainment occupations is very good. For others it is poor.

The development of new products and services should continue the demand for workers in advertising. Increases in competition among producers of industrial and consumer goods will also help to keep many opportunities available. Since advertising seems to attract young people, it is probable that those seeking entry will face stiff competition.

Opportunities will be limited for those seeking to enter the performing arts occupations. The professional acting, singing, dancing, and music fields have long been overcrowded with those desiring fame in these occupations, and this is expected to persist. However, the demand for teachers of performing arts will be more promising.

The outlook is for continued rapid growth in opportunities for careers in architecture in the 1970's. Growth will be rather slow in interior decorating and design and industrial design.

Chances for entering a career as a model are about one in ten. The opportunities for men in the modeling field are very limited.

There will be many opportunities throughout the 1970's for apparel designers.

The demand for professional athletes, athletic directors, and athletic coaches will increase during the 1970's. However, there are increasing numbers seeking to enter these occupations. Employment opportunities will be limited except for those with determination, the required physical makeup, experience, and ability.

Review Questions:

1. What is the main focus of Arts and Entertainment occupations?
2. What is meant by "creative work"? "performing arts"?
3. How is participation in high school activities related to Arts and Entertainment occupations?

Suggested Activities:

1. Review various occupational information materials. Carefully note all occupations which are in the Arts and Entertainment Group. List occupations other than those given in this publication which are in the Arts and Entertainment Group.

2. Select one or more occupations in the Arts and Entertainment Group in which you are interested. Determine the following information for each occupation: (Your teacher may have prepared some forms for your use.)

OCCUPATIONAL STUDY OUTLINE

A. *Name of Occupation:*

B. *Duties of the Occupation:*

C. *Qualifications:* What are the personal requirements?

D. *Age:* How old must I be to enter the occupation?

E. *Sex:* Is this an occupation in which others of my sex are normally employed?

F. *Specific Physical and Health Requirements:* Am I the correct height to do the work? Are my eyesight and hearing adequate? Am I strong enough?

G. *Interest:* Do I possess this interest? If not, could I develop interest in this type of work?

H. *Abilities:* Do I possess the required abilities? If not, could I acquire the knowledge and skills necessary to do the job?

I. *Personality:* Do I possess the personal qualities necessary for doing this type of work? If not, could I develop these qualities?

J. *Values and Attitudes:* Does anything about this job violate values and attitudes I have about people and work? If so, could I adjust to situations that required that I change my values and attitudes?

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K. *Preparation:* What subjects do I need to study? What special training will I need? How long will it take to receive this training? How much will it cost? Can I get this training within the state? Is work experience required for entry into this occupation? What is the method of entry into this occupation?

L. *Working Conditions on the Job:* Is it hazardous work? Is it noisy or dirty? Will I be working in shifts? Will I work indoors or outdoors? Is it hard work? Does the work require being away from home for long periods of time?

M. *Rewards from Work:* How much is the beginning pay? Is there chance for advancement? Will this work experience help me get a better job? Would I be happy doing this type of work?

N. *Employment Outlook:* How many are employed in the occupation at present? Are there employment opportunities in my community or state for this type of work?

O. *Special Requirements (such as certification, licenses, and examinations):*

3. Invite someone who is employed in an Arts and Entertainment occupation to visit your class and discuss the nature of his work.

4. Develop a display, bulletin board, or poster depicting occupations in the Arts and Entertainment Group. Cut pictures from magazines or newspapers which show workers in Arts and Entertainment occupations.

5. Review the want ads of a newspaper. Cut out those ads for jobs in the Arts and Entertainment Group and place them on a poster or bulletin board. Note where they are found, the rate of pay, and requirements for entry.

6. Review the yellow pages of the local telephone directory. Make a list of all businesses which might have Arts and Entertainment occupations.

7. Compile a list of all the persons you know who work in Arts and Entertainment occupations. Indicate their occupations and employers.

8. Invite the art or music teacher in your school to visit class. Have him discuss Arts and Entertainment occupations. It would also be well to have him discuss how enrolling in an art or music class can help provide the training needed for entering various occupations.

9. Visit the art or music department in your school. Have the teacher explain the facilities found there. (It is suggested that arrangements for the visit be made well ahead of the visit.)

10. Conduct one or more of the following activities which relate to advertising occupations:
    a. Arrange to visit a newspaper publishing company, radio or television station, printer, photographer, or an advertising agency that employs people in the advertising occupations. Since most people enter these occupations as clerks, assistants, or copywriters, find out what the typical day of work is like in such positions. Get someone to show you how advertisements are prepared, including planning, supervision of, textwriting, illustration, layout, and reproduction. Find out how many people are required to develop the advertisement.
    b. Make a poster to be displayed in the classroom, using the following procedure:
        (1) Decide upon the size of the poster and the materials.
        (2) Decide upon a product or service you would like to advertise. Be creative.

(3) Poll students in the classroom to determine interest in the product or service.

(4) Get information on other products or services similar to your selection: prices, sales, and methods of advertising.

(5) Find out the advantages and disadvantages your product or service has in relation to competing products and services.

(6) Create jingles, make up slogans, and write the descriptive information to be included on the poster. Attract the attention of your classmates!

(7) Determine how you are going to arrange the layout of the slogans, jingles, illustrations, and descriptive information on the page. Determine the size of illustrations and print to use on the poster.

(8) Complete the poster. Do your own printing by hand, using various sizes, shades, and colors. Use illustrations from magazines, newspapers, etc., or do your own illustrating, using various shades and colors. You may find ideas in books, magazines, newspapers, television commercials, billboards, or store window displays.

(9) Place the poster so persons inside and outside the classroom can view it for study. Observe the reactions of those who view the poster.

c. Read the following book:

Johnson, George. *Your Careers in Advertising.*
Available from: Julian Messner
1 West 39th Street
New York, New York 10018

11. Conduct one or more of the following activities which concern the performing arts:

a. Plan to work with your communications teacher in the following activities (those interested in music should work with the music teacher):

(1) Obtain a copy of a short drama or comedy that contains parts for acting, dancing, and/or singing.

(2) Select a character from the play; study his personality traits, gestures, and attitudes. Determine his relationship to the overall scheme of the play.

(3) Learn (memorize) about 25 lines that are spoken by the character you have selected.

(4) Practice presenting the character, in voice, song, or dance, as you believe he should be presented.

(5) Having read, studied, and memorized the lines, audition before the speech or English teacher (communications teacher) or the music teacher. Have the teacher criticize your performance.

b. Audition for a part in a school play or in some other local production.

c. Attend a locally-produced play. Observe the costumes, stage setting, and lighting. Notice the makeup of the performers. Interview at least one performer after the presentation.

d. Participate in talent shows sponsored by the school, civic clubs, and churches.

e. Plan to see one of the following films:

(1) *Ballerina.*
Available from: Canadian Consulate General
Suite 2110, International Trade Mart
2 Canal Street
New Orleans, Louisiana 70130

(2) *Music: Career or Hobby?*
Available from: Coronet Films
65 E. South Water Street
Chicago, Illinois 60601

f. Read one of the following books:

(1) Curtis, Robert. *Your Future in Music.*
Available from: Richards Rosen Press, Inc.
29 East 21st Street
New York, New York 10010

(2) Denis, Paul. *Opportunities in a Dancing Career.*
Books numbers 2, 3, and 4 are available from:
Vocational Guidance Manuals
235 East 45th Street
New York, New York 10017

(3) Moore, Dick. *Opportunities in Acting.*

(4) Spaeth, Sigmund. *Opportunities in Music Careers.*

(5) Hirchfield, Burt. *Stagestruck: Your Career in the Theatre.*
Available from: Julian Messner
1 West 39th Street
New York, New York 10018

(6) Taylor, Theodore. *People Who Make Movies.*
Available from: Doubleday and Company, Inc.
501 Franklin Ave.
Garden City, New York 11530

(7) Ward, John Owen. *Careers in Music.*
Available from: Henry Z. Walck, Inc.
19 Union Square West
New York, New York 10003

12. Conduct the following activities that concern occupations in architecture:

a. Use your imagination to design a modern building. Sketch the building on paper. Write a report in which you tell how the building should be located on the lot, type of foundation you think should be used, materials used in construction, and how much you think the materials and labor would cost. You may use building materials and building construction books as research materials. The report should be at least three pages long.

b. Consult with your mathematics teacher to arrange a series of math problems dealt with in architectural work. For example, how would you figure the total square foot area required for a wall foundation footing when the load- and soil-bearing capacity is given? How would you figure the size air-conditioning unit needed for a house with 1200 square feet of floor space? (Such problems and solutions can be found in building materials and construction books, and drafting books.)

c. Consult with the drawing instructor in arranging to draw a floor plan for a house, giving dimensions and notes. Study a mechanical or an architectural drawing book to discover how to practice lettering, use instruments, etc.

d. Plan to view the following filmstrip:
Architecture and Your Life. 1963. Silent. 50 frames.
Available from: American Institute of Architects, Librarian
1735 New York Avenue, Northwest
Washington, D. C. 20006

13. The following activities relate to interior decorating and designing occupations. Conduct those which interest you.

a. Work with the home economics teacher with the following activities:

(1) Determine some factors to take into consideration when planning the arrangement of furniture in a home, selection of furniture (including colors), draperies, floor coverings, etc.

(2) Sketch plans for furniture arrangement for a large living room or office. Use colors in completing the work.

(3) Make a study of the various paints, wallpaper, and fabrics used in interior decorating.

b. Tour the lobby of a motel or doctor's office to view the arrangement of furniture, fabrics from which the draperies are made, wall decorations, wall colors, floor covering, and other physical features of the room. Tell about your findings in a written report that is three pages or more in length.

c. Read the following book:

Ball, Victoria. *Opportunities in Interior Design and Decorating.*
Available from: Vocational Guidance Manuals
235 E. 45th Street
New York, New York 10017

14. Conduct the following activities related to the work of industrial designers.

a. Select a product such as a household appliance, cooking utensil, or an automobile. Use your imagination to modify certain features of the product that would make it more useful.

b. Make a two- or three-view drawing of a familiar object in your home, showing dimensions and notes. Study a mechanical drawing book to discover how to do some lettering and to learn how to use drawing instruments. Secure the assistance of a mechanical drawing or drafting teacher.

15. Conduct one or more of the activities listed below. These relate to clothing and modeling occupations.

a. Work with the home economics teacher for the following:

(1) Without the use of patterns and illustrations, sketch your idea for a piece of clothing for a male or female.

(2) Develop on paper the pattern for making the garment.

(3) Cut out the pattern pieces.

(4) Pin the paper pieces together with straight pins (on a model if possible).

(5) Make any modifications you think necessary.

(6) You may wish to try sewing a garment from your design.

b. Tour a department store to see which fabrics and styles are being bought.

c. Arrange to see the following filmstrip:

The Designer. 1961. 11½ min., color.
Available from: National Cotton Council of America
Audio Visual Services
P. O. Box 12285
Memphis, Tennessee 38112

d. Read the following books:

(1) Fashion Group, Inc. *Your Future in Fashion Design.*
Available from: Richards Rosen Press, Inc.
29 East 21st Street
New York, New York 10010

(2) Head, Edith. *Fashion As a Career.*
Available from: Julian Messner
1 West 39th Street
New York, New York 10018

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  e. Interview the home economics teacher. Find out what personal characteristics an individual must possess in order to be a successful model. Check out reading material about fashion careers.

  f. Interview a local clothing store owner, manager, or buyer who employs models either part-time or full-time. Ask for professional opinions concerning your chances for success as a model.

  g. Apply for a job modeling teen-age styles at a local clothing store during out-of-school hours.

16. Conduct the following activities which concern photography:

  a. Join the camera club in your school if there is such an organization. Learn how to take as many different kinds of pictures, using as many different kinds of cameras, as possible. Try developing pictures in a darkroom, cutting pictures to desired sizes, enlarging, and retouching pictures. Acquire a photography book and study the methods and techniques of taking pictures, developing pictures, enlarging, and retouching.

  b. Arrange to visit a photography studio. While there, observe the activities of the photographer as he takes portraits. Interview the photographer to find out about the requirements of photography careers, methods of entering and advancing in the field, earnings, and fringe benefits.

XV. Locating And Applying For A Job

You will enter the world of work when you get a job. Getting a job involves first locating work and then applying for it. Most of the time this is relatively easy to do. Many times, however, considerable planning and effort may be required. With a little understanding of how work is found and applied for, you should be able to successfully get a job. This unit is designed to assist you in entering the world of work.

The following questions are discussed in this unit:

1. **How are jobs located?**
2. **How is application made for a job?**
3. **What should be considered when preparing for a personal interview?**
4. **What does an employer want to know about a job seeker?**
5. **What should a job seeker learn about the employer?**

1. How are jobs located?

Jobs are located in several ways. It is a good idea to know the different ways that are commonly used. In addition, it should be pointed out that persons should attempt to locate only those jobs for which they are qualified. Some common sources of help in locating jobs are (1) employment offices, (2) placement offices, (3) various news media, (4) family and friends, and (5) direct calling.

Employment Offices. There are two kinds of employment offices: (1) public and (2) private. Public employment offices are operated by the government. The Mississippi Employment Service is an example of a public agency operated by the State of Mississippi.

A person who is looking for a job may go to a public employment agency and fill out an application blank. Frequently, counselors in the public agency will interview each person to determine specific qualifications. A summary of the interview and the completed application blank will be placed in a file of available workers. Public employment agencies usually do not charge fees for their services. Many businesses and industries list jobs with public employment offices.

Private employment agencies charge fees for placing persons in jobs. Such agencies may not consider a person's application unless the person is well qualified to hold a job. Private agencies will frequently have jobs listed that public agencies do not have.

Placement Offices. Schools and colleges often maintain a placement service to assist students in finding jobs. In schools that do not have such a service, the director, principal, or counselor can usually be of help.

Media. Various news media can help in locating a job. These include newspapers, radio, and television. Perhaps the most useful is the want ad section of a newspaper.

Persons looking for jobs should refer to the "Help Wanted" column of newspapers. Ads should state the kind of work and indicate some of the qualifications necessary for getting the job. Occasionally, misleading ads will appear in papers. These ads tend to glamorize a job or indicate that a person will be required to pay money to get the job. Only the ads which are similar to your interests and which appear honest should be investigated.

Family and Friends. Family members or friends may know of job openings where they work. They can tell you (the job seeker) who to see to apply for a job. They can usually describe the nature of the work and answer questions about the work. Also, they may be willing to recommend you for a job.

Direct Calling. This method of locating a job is used when one does not know if a job opening exists. It involves telephoning various businesses and industries to see if new workers are being hired. The telephone directory may be used as a source of places to call. A person should call only the places which might have jobs related to his specific interests and education. Occasionally, letters of inquiry may be used instead of telephone calls.

2. *How is application made for a job?*

Once a job opening has been located, the next step is to apply for the job. The manner in which an application is made and the appearance of the person making it help determine whether or not he gets the job. Methods of applying for a job include:

(1) Visiting the business and securing an application blank or having a personal interview. Large businesses may have a personnel officer who is in charge of securing new workers. In other businesses, the manager, foreman, or department head may be the person to contact.

(2) Writing or telephoning to request a job application blank or other information.

(3) Writing a letter of application. A personal data sheet should usually accompany a letter of application.

Want ads and other sources frequently indicate the procedure to follow in applying for a job. The person in charge of hiring new workers will indicate the steps to follow in making application. This person will have application blanks and will be able to indicate other requirements, such as letters of recommendation, medical examinations, and the tests to take.

Most employers use an application blank. This blank must be filled out in order to be considered for a job. Several suggestions on how to complete an application blank are listed below:

(1) Read the blank thoroughly before answering any questions.

(2) Follow the directions on the blank.

(3) Use ink or a typewriter to fill out the blank.

(4) Answer all questions. (Those that do not apply should have a line drawn through them or "NA" written in the appropriate space. "NA" means that the particular question is not applicable.)

(5) Give complete and accurate information.

(6) Spell all words correctly and fully.

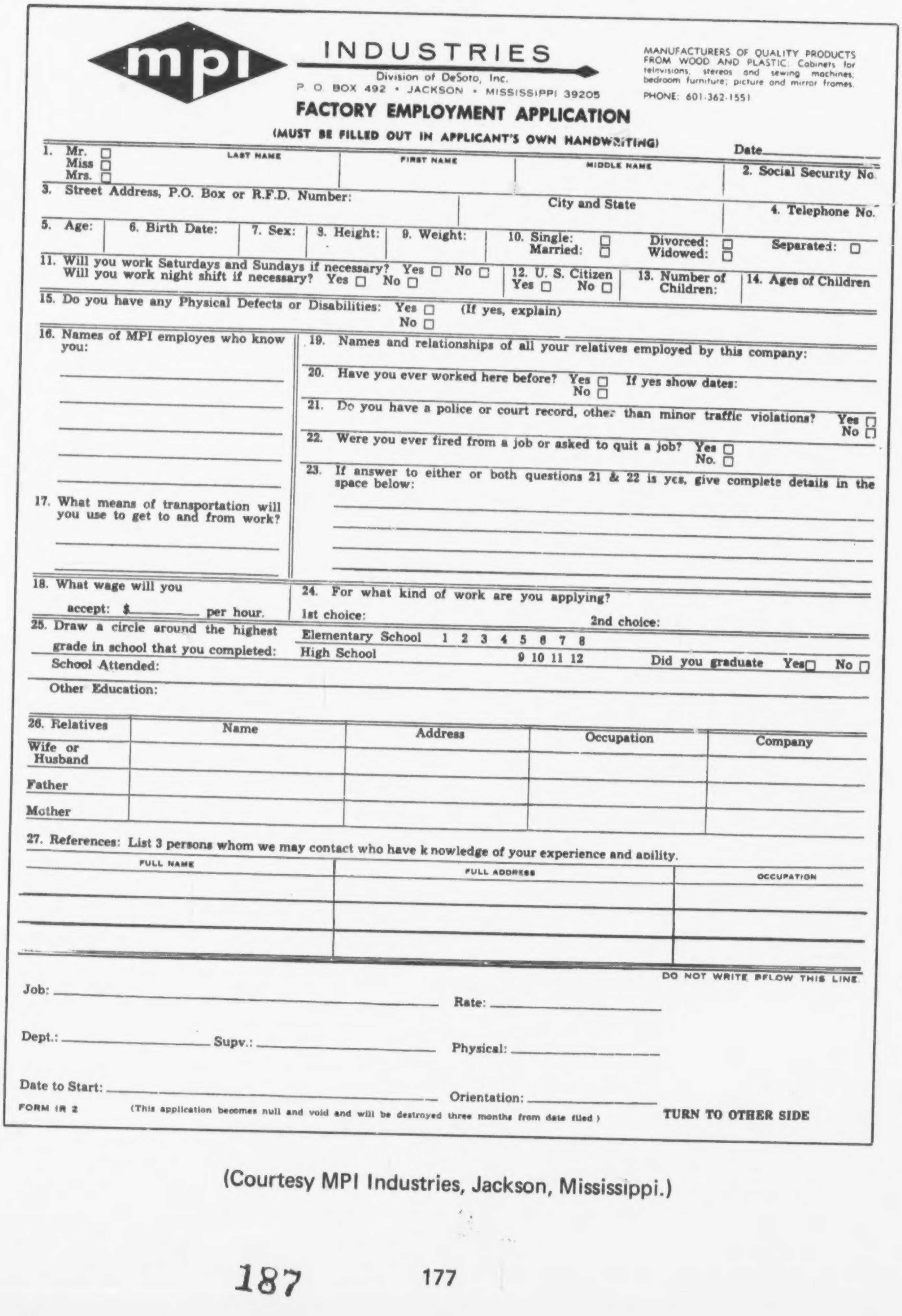
(7) Avoid using abbreviations and nicknames.

(8) Be neat.

(9) Sign the form properly.

(10) List good references. (It is best to secure permission from a person before listing his name as a reference. Examples of references include teachers, ministers, former employers, and qualified friends. Only persons who are familiar with one's background should be listed as references.)

SAMPLE JOB APPLICATION BLANK
(Front)



mpi INDUSTRIES
Division of DeSoto, Inc.
P. O. BOX 492 • JACKSON • MISSISSIPPI 39205

MANUFACTURERS OF QUALITY PRODUCTS FROM WOOD AND PLASTIC: Cabinets for televisions, stereos and sewing machines; bedroom furniture; picture and mirror frames.
PHONE: 601-362-1551

FACTORY EMPLOYMENT APPLICATION

(MUST BE FILLED OUT IN APPLICANT'S OWN HANDWRITING)

Date________

1. Mr. ☐ Miss ☐ Mrs. ☐ LAST NAME | FIRST NAME | MIDDLE NAME | 2. Social Security No.

3. Street Address, P.O. Box or R.F.D. Number: | City and State | 4. Telephone No.

5. Age: | 6. Birth Date: | 7. Sex: | 8. Height: | 9. Weight: | 10. Single: ☐ Married: ☐ Divorced: ☐ Widowed: ☐ Separated: ☐

11. Will you work Saturdays and Sundays if necessary? Yes ☐ No ☐
Will you work night shift if necessary? Yes ☐ No ☐
12. U. S. Citizen Yes ☐ No ☐
13. Number of Children:
14. Ages of Children

15. Do you have any Physical Defects or Disabilities: Yes ☐ No ☐ (If yes, explain)

16. Names of MPI employes who know you:

17. What means of transportation will you use to get to and from work?

19. Names and relationships of all your relatives employed by this company:

20. Have you ever worked here before? Yes ☐ No ☐ If yes show dates:

21. Do you have a police or court record, other than minor traffic violations? Yes ☐ No ☐

22. Were you ever fired from a job or asked to quit a job? Yes ☐ No. ☐

23. If answer to either or both questions 21 & 22 is yes, give complete details in the space below:

18. What wage will you accept: $________ per hour.

24. For what kind of work are you applying?
1st choice: 2nd choice:

25. Draw a circle around the highest grade in school that you completed:
Elementary School 1 2 3 4 5 6 7 8
High School 9 10 11 12 Did you graduate Yes☐ No ☐
School Attended:
Other Education:

26. Relatives	Name	Address	Occupation	Company
Wife or Husband				
Father				
Mother				

27. References: List 3 persons whom we may contact who have knowledge of your experience and ability.

FULL NAME	FULL ADDRESS	OCCUPATION

DO NOT WRITE BELOW THIS LINE.

Job: ________ Rate: ________

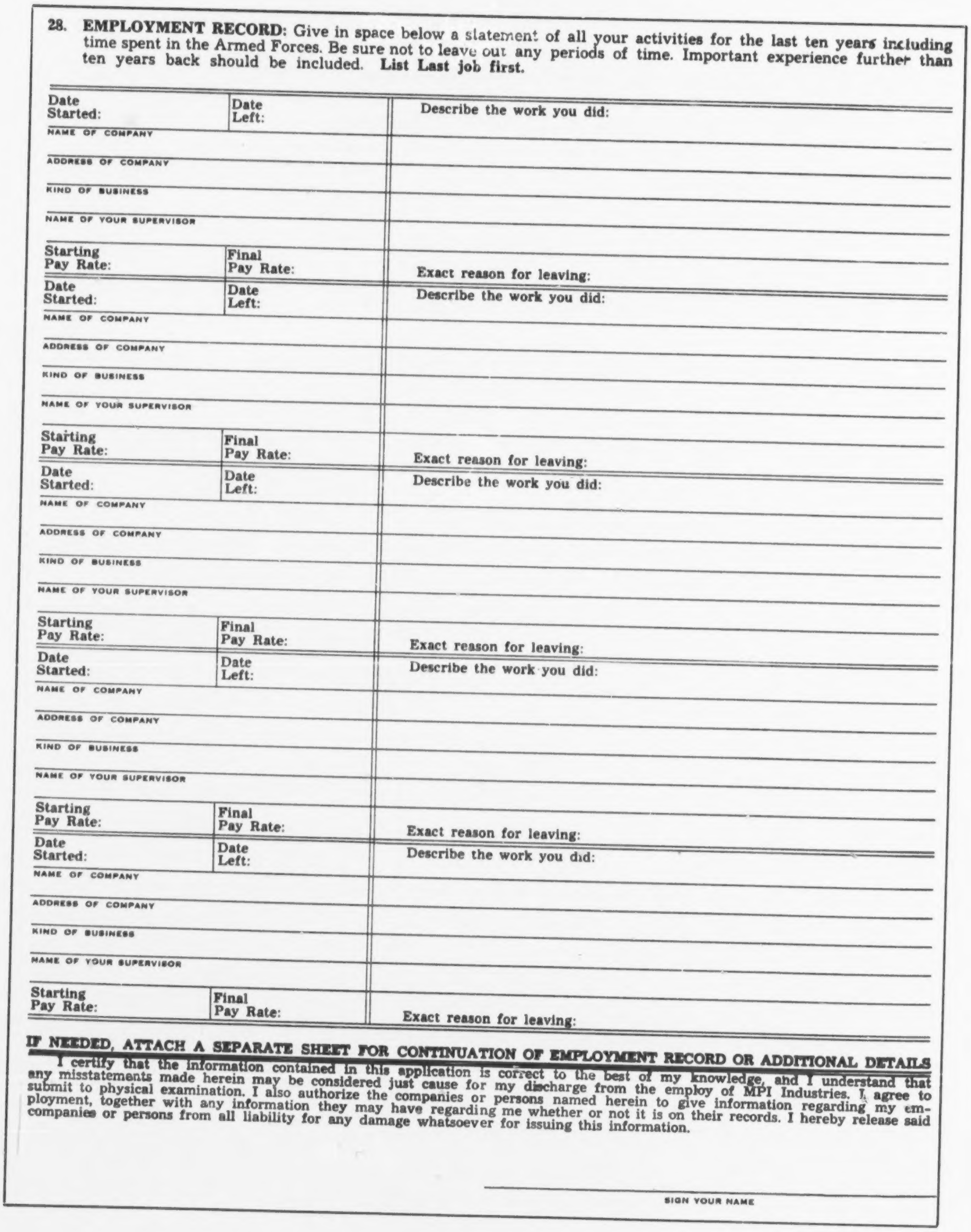
Dept.: ________ Supv.: ________ Physical: ________

Date to Start: ________ Orientation: ________

FORM IR 2 (This application becomes null and void and will be destroyed three months from date filed.) TURN TO OTHER SIDE

(Courtesy MPI Industries, Jackson, Mississippi.)

SAMPLE JOB APPLICATION BLANK
(Back)



28. **EMPLOYMENT RECORD:** Give in space below a statement of all your activities for the last ten years including time spent in the Armed Forces. Be sure not to leave out any periods of time. Important experience further than ten years back should be included. **List Last job first.**

Date Started:	Date Left:	Describe the work you did:
NAME OF COMPANY		
ADDRESS OF COMPANY		
KIND OF BUSINESS		
NAME OF YOUR SUPERVISOR		
Starting Pay Rate:	Final Pay Rate:	Exact reason for leaving:
Date Started:	Date Left:	Describe the work you did:
NAME OF COMPANY		
ADDRESS OF COMPANY		
KIND OF BUSINESS		
NAME OF YOUR SUPERVISOR		
Starting Pay Rate:	Final Pay Rate:	Exact reason for leaving:
Date Started:	Date Left:	Describe the work you did:
NAME OF COMPANY		
ADDRESS OF COMPANY		
KIND OF BUSINESS		
NAME OF YOUR SUPERVISOR		
Starting Pay Rate:	Final Pay Rate:	Exact reason for leaving:
Date Started:	Date Left:	Describe the work you did:
NAME OF COMPANY		
ADDRESS OF COMPANY		
KIND OF BUSINESS		
NAME OF YOUR SUPERVISOR		
Starting Pay Rate:	Final Pay Rate:	Exact reason for leaving:
Date Started:	Date Left:	Describe the work you did:
NAME OF COMPANY		
ADDRESS OF COMPANY		
KIND OF BUSINESS		
NAME OF YOUR SUPERVISOR		
Starting Pay Rate:	Final Pay Rate:	Exact reason for leaving:

IF NEEDED, ATTACH A SEPARATE SHEET FOR CONTINUATION OF EMPLOYMENT RECORD OR ADDITIONAL DETAILS

I certify that the information contained in this application is correct to the best of my knowledge, and I understand that any misstatements made herein may be considered just cause for my discharge from the employ of MPI Industries. I agree to submit to physical examination. I also authorize the companies or persons named herein to give information regarding my employment, together with any information they may have regarding me whether or not it is on their records. I hereby release said companies or persons from all liability for any damage whatsoever for issuing this information.

SIGN YOUR NAME

(Courtesy MPI Industries, Jackson, Mississippi.)

(11) Apply for a specific job (list the job on the application blank, if requested.)

Frequently it is necessary to prepare a letter when applying for a job. These are known as "letters of application." Sometimes letters of application are preferred to just the completion of an application blank. Letters of application are used as follows:

(1) When an ad requests that applications be made by letter.

(2) When the employer requests a letter of application.

(3) When other methods of application are not convenient. (For example, when one is applying for a job in another town.)

(4) When the job demands it. (Certain high-level positions may be best applied for by letter. The letter serves as a record of the contact.)

Letters of application should be well written and neatly prepared. Letters should be in ink or typewritten. They should *not* be used to "sell" one's self to the employer. Neither should a letter state how badly one needs a job. Letters should be honest and straightforward.

Personal data sheets are used to supplement letters. They give specific personal information that is not included in a letter or application blank. Personal data sheets should be typewritten, or, if a typewriter is not available, written in ink. A definite format should be used. A sample personal data sheet is shown on page 181.

3. *What should be considered when preparing for a personal interview?*

Very few jobs are filled before the applicant is interviewed. A job interview is a normal part of getting work and may be the most important part. Interviews are helpful to the job seeker and to the employer. They provide an opportunity for the job seeker to learn more about the employer and give the employer an opportunity to personally assess the job seeker.

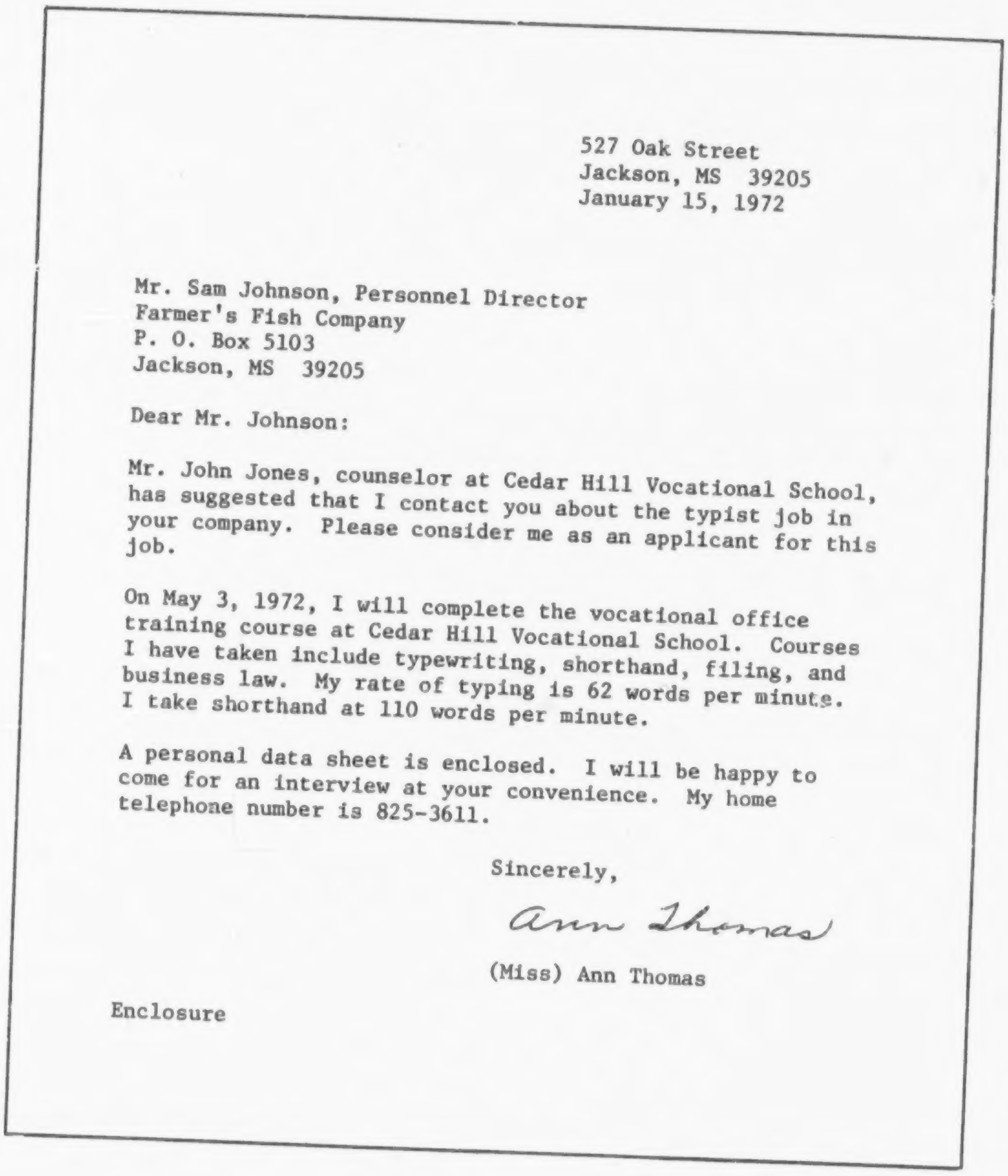
Job interviews are usually conducted by the employer or his representative. In small businesses the owner may do the interviewing. In large businesses a personnel manager or department head may conduct the interview.

A job seeker needs to make a good impression during an interview. Frequently, the decision to hire someone is based on the impression the person conducting the interview gets of the job seeker. It is a good idea to give some thought to the interview before going for it. One needs to have in mind the exact job for which he is applying. He also needs to learn a little about the business to which he has applied.

A job seeker should have the following items with him during an interview:

Social Security card	Pen and pencil
Personal data sheet	Completed application blank and other forms

A sample letter of application is shown below:



527 Oak Street
Jackson, MS 39205
January 15, 1972

Mr. Sam Johnson, Personnel Director
Farmer's Fish Company
P. O. Box 5103
Jackson, MS 39205

Dear Mr. Johnson:

Mr. John Jones, counselor at Cedar Hill Vocational School, has suggested that I contact you about the typist job in your company. Please consider me as an applicant for this job.

On May 3, 1972, I will complete the vocational office training course at Cedar Hill Vocational School. Courses I have taken include typewriting, shorthand, filing, and business law. My rate of typing is 62 words per minute. I take shorthand at 110 words per minute.

A personal data sheet is enclosed. I will be happy to come for an interview at your convenience. My home telephone number is 825-3611.

Sincerely,

Ann Thomas

(Miss) Ann Thomas

Enclosure

A sample personal data sheet is shown below:

PERSONAL DATA SHEET

Personal

Name--Ann Thomas
Address--527 Oak Street, Jackson, MS 39205
Telephone--825-3611
Date of Birth--April 12, 1953
Height--5 feet, 5 inches
Weight--115 pounds
Health--excellent

Skills

Typing--62 words per minute
Shorthand--110 words per minute
Filing

Education

1972--Will receive certificate in vocational office training from Cedar Hill Vocational School
1971--Graduate of Cedar Valley High School

Experience

June 1-September 1, 1971--part-time typist for Ballard Insurance Company
June 1-September 1, 1970--part-time waitress at Pam's Pan Cake House

Interests and Hobbies

Swimming, sewing

References

Mr. John Jones, Counselor, Cedar Hill Vocational School, 501 Cedar Hill Drive, Jackson, MS 39205

Mrs. Betty Baker, Office Education Teacher, Cedar Hill Vocational School, 501 Cedar Hill Drive, Jackson, MS 39205

Mr. Robert Ballard, Manager, Ballard Insurance Company, P. O. Box 2124, Jackson, MS 39205

Several things should be remembered about interviews. Perhaps the most important is to let the interviewer do most of the talking and to think before answering questions. All questions should be answered honestly and politely. Several tips on how to make a good impression during an interview are listed below:

Be familiar with the firm and its business. If you have the opportunity, show some interest in the welfare and progress of the firm.

Arrive on time for the interview and alone. The employer wants to talk with you, not your parents, relatives, or friends.

Know the person you are to see and occasionally call him by his name during the interview. Be friendly but not familiar.

Be honest about what you can do and what you like to do. Do not claim you "can do anything" because you can't.

Be dressed suitably. Fancy overdress is not in good taste either before or after you get the job. Sloppy or slouchy dress also is in poor taste.

You may have to wait. If so, be patient and wait graciously. Don't pace the floor, shuffle around, or show impatience.

Do not smoke or chew gum during the interview.

In a private office or any time during the interview, show good manners. . . take your hat off and stand until invited to be seated.

The employer knows more about the job and his business than you do, so let him do most of the talking.

Speak clearly, confidently, courteously. . . answer all questions completely. An occasional smile will be a big help.

Do not criticize others, either previous employers or your associates.

Do not be afraid of an interview. Most employers are patient and considerate. If you have something to offer, be confident. He is looking for good workers and you are looking for a good job.

(Adapted from materials supplied by the Mississippi Employment Security Commission, Jackson, Mississippi.)

4. What does an employer want to know about a job seeker?

Employers are going to hire workers who can get a job done. Businesses, industries, and government agencies must have workers who are productive. Before a worker is hired, the employer attempts to learn about the job seeker. The employer tries to determine if the job seeker has the ability and energy to do the required work.

Before a worker is hired, employers usually want to know three things:

(1) the person's attitude toward people and work.

(2) the person's education and work experience.

(3) the person's career plans.

In order to determine these things, a job application blank and personal interview are used. Letters of recommendation are also helpful to employers. Below is a list of questions that employers often ask:

1. What job are you applying for?
2. Why did you apply to this company?
3. Do you want permanent or temporary work?
4. What classes did you like best in school?
5. Did you graduate from high school? college? vocational school?
6. What jobs have you previously held?
7. Why did you leave these jobs?
8. What are your qualifications for this job?
9. Are you in good health?
10. How much pay do you want to receive?
11. Do you drink, smoke, or use drugs?
12. Were you absent from school very often? Why?
13. Would you be willing to work overtime?
14. Do you have friends or relatives working for our company?
15. What were your grades in school?
16. Do you prefer to work with other people or by yourself?
17. What are your hobbies?
18. When can you start to work?
19. Have you completed a job application blank?
20. What do you like to do most? Least?
21. Are you married?
22. What are your plans for 10 years from now?
23. How many children do you have? What are their ages?
24. Where do you live?
25. How will you get to work each day?

5. *What should a job seeker learn about the employer?*

A job seeker should attempt to determine if a particular job is the right one for him. Persons should not be too choosy, however. Those who are hard to please may find themselves without a job. One of the advantages of a job interview is that it permits a person to learn more about the job and employer. Other ways to find out about an employer are (1) to talk to older employees and (2) to read brochures which the employer may provide. It is also a good idea to compare two or three employers.

Several things should be considered before a job is accepted. Eleven questions which a person should attempt to answer for himself are listed below:

1. What will I do on the job?
2. Do I have the ability to do the work?
3. Who will be my boss?
4. What are the working conditions?
5. What will I be paid? How much?
6. Will I have to move? If so, who will pay the costs of moving?
7. What kinds of tools are needed? Will I have to buy them?
8. Will I have to work overtime? At night? On weekends?
9. How will I dress? Will I have to buy uniforms?
10. What is the possibility of advancement?
11. Will I have the opportunity for additional training and education?

Review Questions:

1. What are the two kinds of employment offices?
2. What are the methods of applying for a job?
3. When is a letter of application needed?
4. Why are personal data sheets used?
5. What should a person take with him to an interview?
6. What are the three main things an employer wants to know about a job seeker?

Suggested Activities:

1. Review the "Help Wanted" column in a newspaper. Cut out all ads which offer jobs in which you may be interested.

2. Role play a job interview. One person will be needed as a personnel director. You can be the job seeker. Remember to apply for a specific job and to make a good impression.

3. Obtain several job application blanks from nearby businesses. Practice filling them out.

4. View one or more of the following films:

   Job Interview: Women

   Job Interview: Men

   Your Job: Finding the Right One

   Your Job: Applying For It

   The above films are available from:

   Curriculum Coordinating Unit, Film Library
   P. O. Drawer DX
   State College, Mississippi 39762

5. Invite the director of personnel from a local business to visit class. Have him explain how he conducts job interviews and what he looks for in a job seeker.

6. Develop a personal data sheet for yourself.

7. Prepare a letter of application for a fictitious job. Secure the assistance of the communications, business education, and occupational orientation teacher, if needed.

XVI. Working On The Job

Once you have a job, it is up to you to be successful. It is important that you know how to cope with the problems that arise. You must know what the employer expects. You must be able to get along with the other workers. New workers must be alert and flexible. You must be able to size up a situation and act accordingly.

This unit is designed to answer the following questions:

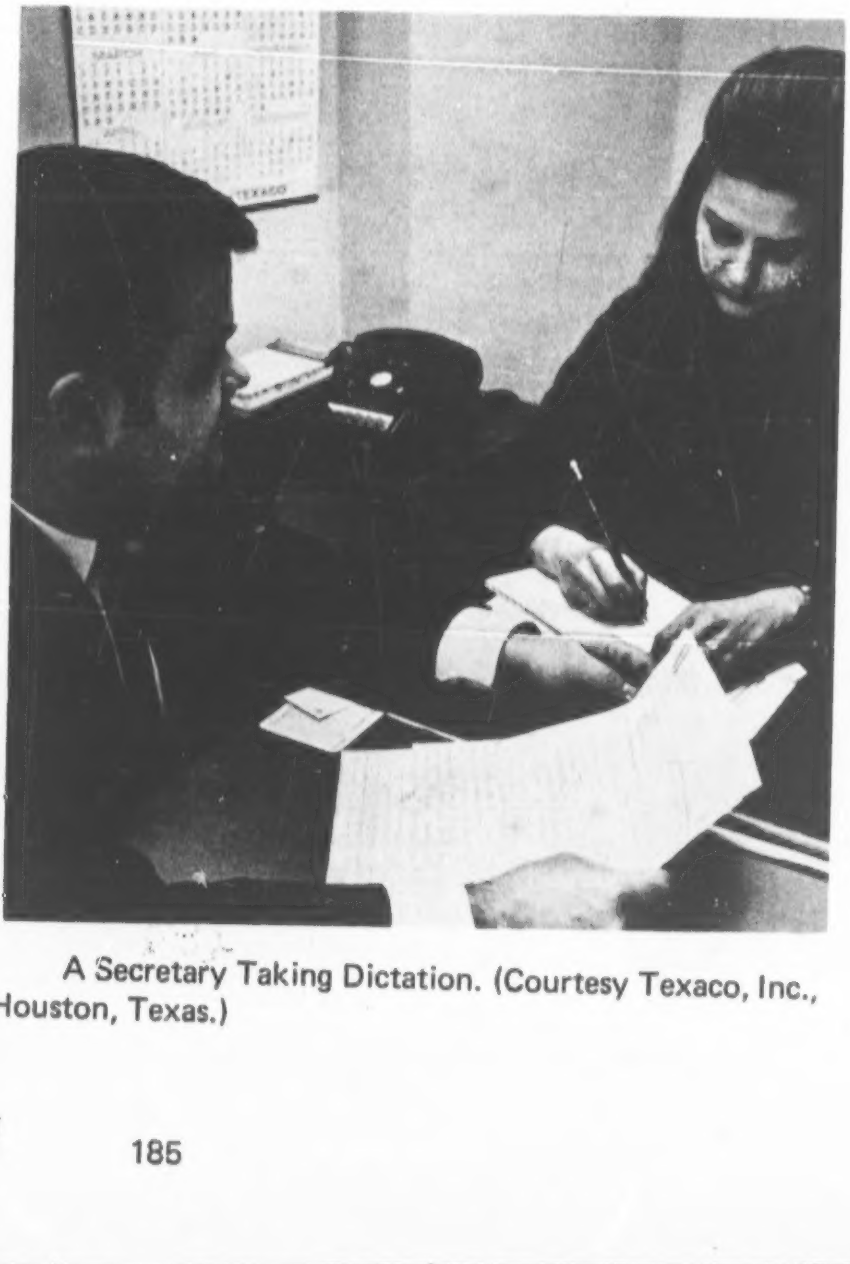
1. **What problems may confront employees?**
2. **What do employers expect of employees?**
3. **What consideration should be given to fellow employees?**
4. **What are the rights of employees?**

1. *What problems may confront employees?*

Businesses which hire new workers have usually been in existence for many years. Therefore, some of the employees have worked there a long time. A routine or procedure of operation has been established. The older workers know the routine and new workers must learn the routine.

The function of a business needs to be understood. A new worker should determine what the business is trying to accomplish. It is frequently necessary to set priorities in work. Some things cannot be delayed. For example, a secretary may have more letters than she can prepare in one day. She must be able to select those which are most urgent and prepare them for mailing. Those that are not urgent can be delayed until the next day.

Workers must be able to complete a task once it is begun. This is known as "follow through." A desire to "get a job done" is essential. In addition, workers must realize that they are part of a team. They should help their fellow workers so that work may be accomplished as scheduled.



A Secretary Taking Dictation. (Courtesy Texaco, Inc., Houston, Texas.)

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New workers frequently find certain things they would like to change about their work. They may also have suggestions about how the operation of the business may be changed. It is a good idea to size up a situation before making suggestions. Older workers frequently resist change. Suggestions from a new worker may not be well received. In fact, a new worker may be rejected by the older workers if he attempts to change too many things. It should be remembered that an established business has been operating successfully for a long time before the new worker came on the scene.

All new workers need to be flexible. They need to be able to adjust in changing from one job to another. They need to be able to learn new routines and skills. A worker may become unhappy if he does not try to learn new skills. In fact, he may even lose his job.

New workers need to have a proper attitude toward work. They need to have "a willing to learn" attitude. They should display enthusiasm for their work. Older workers like to see enthusiastic new workers, but they do not like for new workers to try to take over.

In summary, the major problem of new workers is to "fit in." They must be able to adjust to the new work environment. Good relationships with fellow workers are a must. These demand an open mind and flexibility in job performance.

2. *What do employers expect of employees?*

Employers expect productivity. Workers must make money for their employers. If workers do not make money, the employer cannot pay them. Employers usually expect the following things of workers:

Traits That Workers Should Have

1. Good work attitude
2. Dependability
3. Cooperation
4. Initiative
5. Pride in work
6. Ability to get along with others
7. Honesty
8. Enthusiasm
9. Cheerfulness
10. Ability to listen to and carry out instructions
11. Loyalty
12. Efficiency—not wasting time and materials
13. Reliability
14. Good and prompt attendance
15. Helpfulness
16. Willingness to learn
17. Ability to follow rules and regulations

Perhaps another way to determine what employers expect is to study why people lose their jobs. Most workers have the necessary skill to do the work. The way in which they work and their attitudes toward their fellow workers need to be improved. Below is a list of reasons given by employers as to why workers lose their jobs.

Reasons Why Workers Lose Their Jobs *

1. Carelessness
2. Unwillingness to follow rules
3. Laziness
4. Absence or tardiness without cause
5. Troublemaking
6. Too much attention to outside interests

---

*Courtesy Mississippi Employment Security Commission, Jackson, Mississippi

7. Lack of initiative
8. Too little or too much ambition
9. Disloyalty
10. Irresponsibility
11. Lack of adaptability
12. Misrepresentation

3. *What consideration should be given to fellow employees?*

Most people do not work alone. They work with other people. They must be able to get along with their fellow workers. People do not automatically get along with each other. Patience and understanding for other workers is required.

Perhaps the key to getting along on the job is *cooperation.* If workers do not cooperate, everyone involved will be hurt. The amount and quality of work is reduced when workers do not cooperate. Also, pay raises and promotions are not apt to occur.

Employees who enjoy working together get more work done. They are also able to produce better goods. The world of work is complex. In fact, workers are so dependent on each other that one can hardly be successful without the assistance of another.

It is very important for beginning workers to cooperate with older workers. Much can be learned from workers who have been on a job for a while. Beginning workers need to watch and listen to older workers. They may need to ask questions about their work. The best workers can be determined after only a short time in a job. Beginning workers need to secure assistance from the good workers—not the poor ones.

Consideration of the suggestions of workers who have experience is important. Beginning workers should appreciate helpful suggestions. Actually, an older worker does a person a favor when he tells him about mistakes.

Occasionally disputes will arise at work. It is best to stay out of these except in certain unjust situations. Assisting the workers on one side of a dispute will likely make enemies out of those on the other side. Good workers try to remain neutral.

Differences of opinion are found among workers. These may relate to how the work is to be done. Frequently, it is necessary for one to make a decision for himself. In this case, a careful analysis of the differences is a must. Study the facts that are available and make a decision based on the findings.

A sense of humor is important. It is the ability to laugh at one's self, even when it may hurt inside that allows us to get along with others. It may be difficult for a person to do this. A good sense of humor helps to make a happy and well-adjusted worker.

Several tips on how to get along with fellow workers are listed below:

1. Do your share of the work and a little extra.
2. Recognize your mistakes and admit being wrong.
3. Do extra work or work other than that which you were hired to do, if it is necessary.
4. Develop a sense of humor.
5. Speak with care, choosing words which will not irritate or alienate others.
6. Respect the opinions and rights of other workers.
7. Keep an open mind and be willing to accept new ways of doing things.
8. Cooperate with other workers.
9. Develop an understanding of yourself.
10. Develop a positive attitude. Do not complain about things at work.
11. Compliment fellow workers on a job well done.
12. Avoid being jealous of the employer and of other workers.

4. *What are the rights of employees?*

Just as an employer expects a full day's work for a day's pay, a worker also expects certain things of the employer. All employers are not alike. However, there is similarity in many of the practices that are followed.

Generally, workers can expect the following things of their employers:

1. Orientation to a job—Employers should instruct workers as to how a job is to be done. The amount of training and instruction given will vary. Some jobs require more training than others. A new worker should always ask questions about his work to be sure that he adequately understands it. A worker should never say he knows how to do something when, in reality, he doesn't.

2. Pay—Employees expect to be paid for the work they do. The amount an employer pays out before any deductions is known as "gross pay." The pay check a worker receives is less than the gross pay. This is because various deductions for tax and social security are made. The amount a worker receives after deductions is "net pay." Workers expect to be paid in full on every regular pay day.

A Worker Operating a Bean Harvester. (Courtesy MFC Services, Jackson, Mississippi.)

3. Orientation to benefits—Employers should inform workers about fringe benefits. Fringe benefits are a part of the pay. If workers do not use them they are not receiving the full benefits of work. It should be noted, however, that fringe benefits are to be *used* and not *abused.* Many employers have handbooks which list the fringe benefits in detail.

4. Provision for safety at work—Employers should be aware of the hazards of certain work. They should take steps to make the work environment as safe as possible.

5. Information about changes—The policies of an employer may change. Workers have a right to know these changes. In addition, workers should be informed about changes in their work, rate of pay, and other matters.

6. Discipline for violation of rules—Most of the time workers must abide by certain rules. These rules were established by the employer to increase overall efficiency. Workers should expect to be disciplined if they violate the rules or do not perform as an employer expects. A worker who has broken the rules should not resent the action of the employer.

7. Obedience to all legal regulations—Workers expect their employers to abide by the law. Employers must pay a share of the social security payments and contribute to workmen's compensation. In addition to these, various local regulations may be in effect.

Review Questions:

1. Why should new workers hesitate to suggest changes?
2. What is the major problem facing new workers? Explain.
3. What are some traits that employers expect of workers?
4. What are some reasons why workers lose their jobs?
5. Why should workers cooperate with each other?
6. What should workers expect of employers?
7. Why should a worker be loyal to his employer?

Suggested Activities:

1. Obtain an employee's handbook from a nearby business, industry or government office. Review it. Note the various rules and fringe benefits that are listed.

2. View the following films:

   Your Job: Fitting In
   Your Job: Good Work Habits
   Your Job: You and Your Boss

   The above films are available from:
   Film Library, Curriculum Coordinating Unit
   P. O. Drawer DX
   State College, Mississippi 39762

3. Invite a personnel director or manager of a local business to class. Have him discuss some of the problems faced by new workers.

4. Conduct a panel discussion on the topic "How the traits for success in work are related to traits required for success in school." Mention the following:

   - Attitude (positive versus negative)
   - Hard work
   - Honesty
   - Cheerfulness
   - Obedience to rules and regulations
   - Dress
   - Loyalty
   - Cooperation
   - Good attendance and promptness

5. Develop posters or bulletin boards which portray the characteristics of a good worker.

XVII. Advancing In A Career

Most people are not content to remain in the same job all of their lives. They want to advance to jobs with greater responsibility and more pay. You probably have the same desire. You must remember, however, that most workers begin in jobs with lesser responsibility and advance to those with greater responsibility. Advancement is not automatic. Workers must earn promotions.

The following questions about advancing in the world of work are answered:

1. **What is advancement? How do people advance in careers?**
2. **What responsibilities and rewards accompany advancement?**
3. **Why do people change jobs?**
4. **What preparation may be needed to change jobs?**
5. **What problems accompany changing jobs?**

1. What is advancement? How do people advance in careers?

Success in work and advancement go hand in hand. Advancement means that a worker receives a promotion to another job. Promotions are of three kinds: (1) a better job in the same plant or department, (2) a job with increased responsibility in the same company but in a different plant or department, and (3) a more responsible job with another company. It is to be noted that (1) and (2) are with the same employer, and number (3) is with a different employer.

Promotions with the same employer (numbers (1) and (2) above) are based on a number of factors. Mostly, they reward workers for their productive work. Only the most productive workers usually receive promotions.

Workers occasionally quit working for one company and go to work for another (number 3). A promotion is involved only if the work is at a higher level or requires more responsibility. Sometimes it appears that good workers get passed over at promotion time. After this has occurred several times those workers might want to look for another job. It is possible that another job would be a promotion. However, employers thoroughly investigate the experience and productivity of a new worker before placing him in an advanced job.

Regardless of how a promotion is received, employers usually carefully evaluate a worker. Several factors often considered in granting promotions are listed below.

Productivity. This includes both the quality and quantity of work done. Workers who do well in their present work would also probably do well in an advanced job. How well a worker performs his job often determines how fast the work gets accomplished. Both speed and accuracy of work are considered in granting promotions.

Education. The knowledge a person has about a job is an important consideration in granting a promotion. Usually, a person who knows his present job well will learn a more advanced job. Also considered are the educational background and training of a person. All other things being equal, the person with the most education will receive the first promotion.

Seniority. This refers to how long a person has been working for an employer. The greatest seniority is held by those who have worked for the company the longest. Beginning workers have low seniority. Many employers take seniority into consideration but it is not the sole reason for granting promotions.

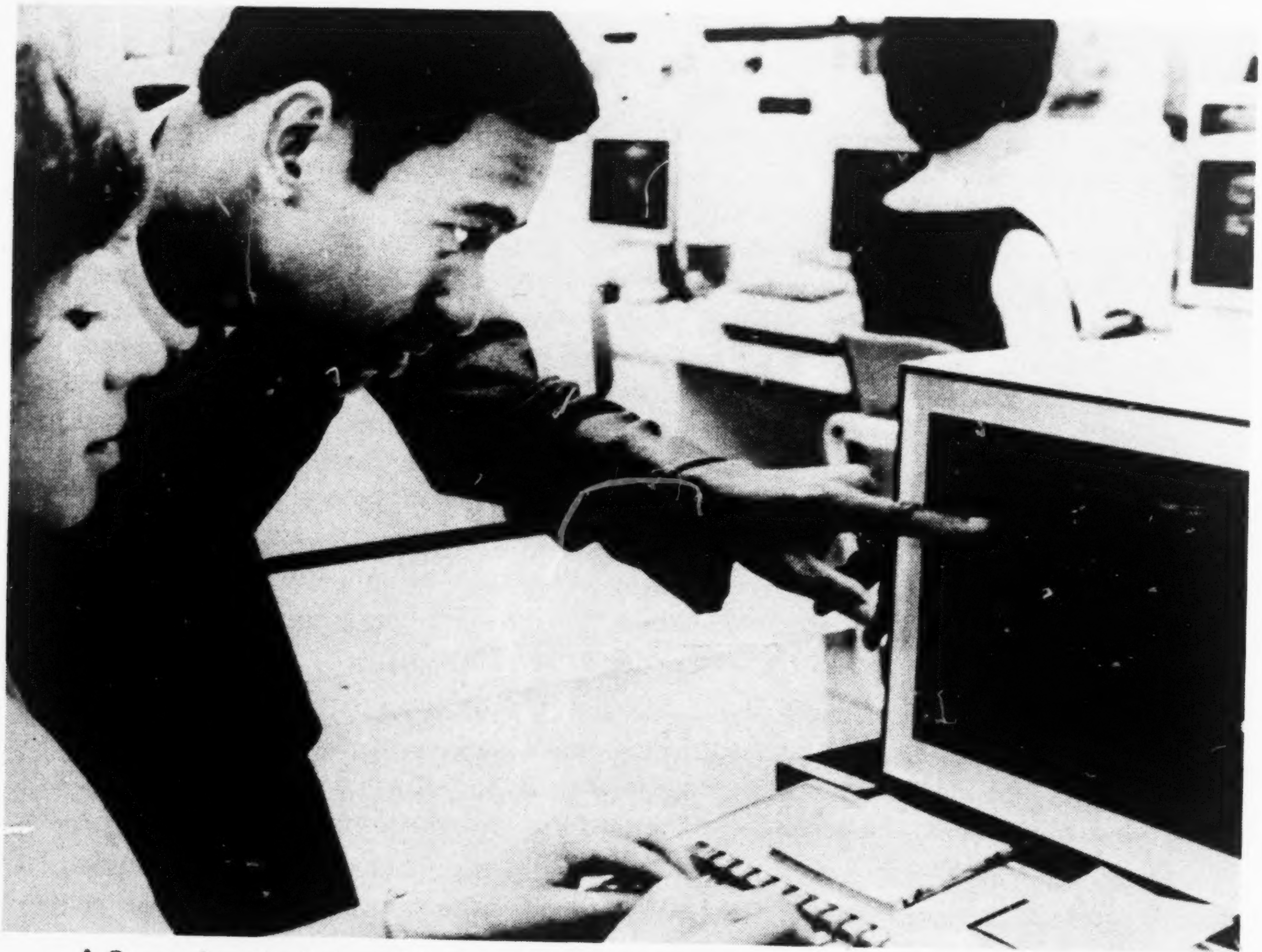
Work Habits. Persons with good work habits are more likely to receive promotions. Good work habits refer to how one goes about doing work. It includes initiative, cooperativeness, flexibility, and the ability to stay with a job until it is completed. Persons in supervisory jobs must display good work habits to those working under them. Especially important is the ability to get along with other workers and to think before speaking and acting.

2. What responsibilities and rewards accompany advancement?

Promotions usually bring additional responsibility. Most of the time promotions involve supervising other workers. A supervisor must see that the other workers perform their jobs well. How well the others do their jobs is a reflection upon the supervisor.

Relationships among workers change when one is promoted to a supervisory job. No longer are all of them co-workers. The supervisor is the boss. Not all persons, however, like the additional responsibility of a supervisory job. A supervisor must be able to be a boss without being "bossy." This demands an understanding of people and how to direct their activities.

Promotions result in advancement to more prestigious jobs. With the prestige goes responsibility. Promotion to high level jobs means that policy making will be involved. The general direction in which a business or industry moves is a reflection on the policies of the business.



A Supervisor Assisting a Worker. (Courtesy Texaco, Inc., Houston, Texas.)

Rewards from advancement may be either tangible or intangible. Tangible rewards refer to increases in pay and fringe benefits. Intangible rewards refer to the personal satisfaction that one obtains from a job well done. Many times people derive greater satisfaction from the intangible rewards than from the tangible rewards.

3. Why do people change jobs?

It is common for people to change jobs. It is less common for people to change careers. Most people tend to stay in the same kind of work. In effect their jobs change but their careers tend to remain the same. Occasionally, however, people do change careers.

People change jobs for a number of reasons. Before changing jobs a person should analyze both the job he presently holds and the new job he is considering taking. Below is a list of reasons why many people change jobs. These things should be considered before changing jobs:

1. Increased pay.
2. Promotion to a higher level job.
3. Improved fringe benefits.
4. Unsatisfactory working conditions.
5. Termination of job or being fired.
6. Failure of health and physical ability.
7. Wishes and well-being of family.
8. Additional education and experience.
9. Declining job market in a certain area.
10. Dissatisfaction with current job.

4. What preparation may be needed to change jobs?

Changing jobs is serious business. It involves finding a new job and quitting the old job. A person should never quit a job until a new one has been secured. Various professional occupations have codes of ethics which should be followed in changing jobs.

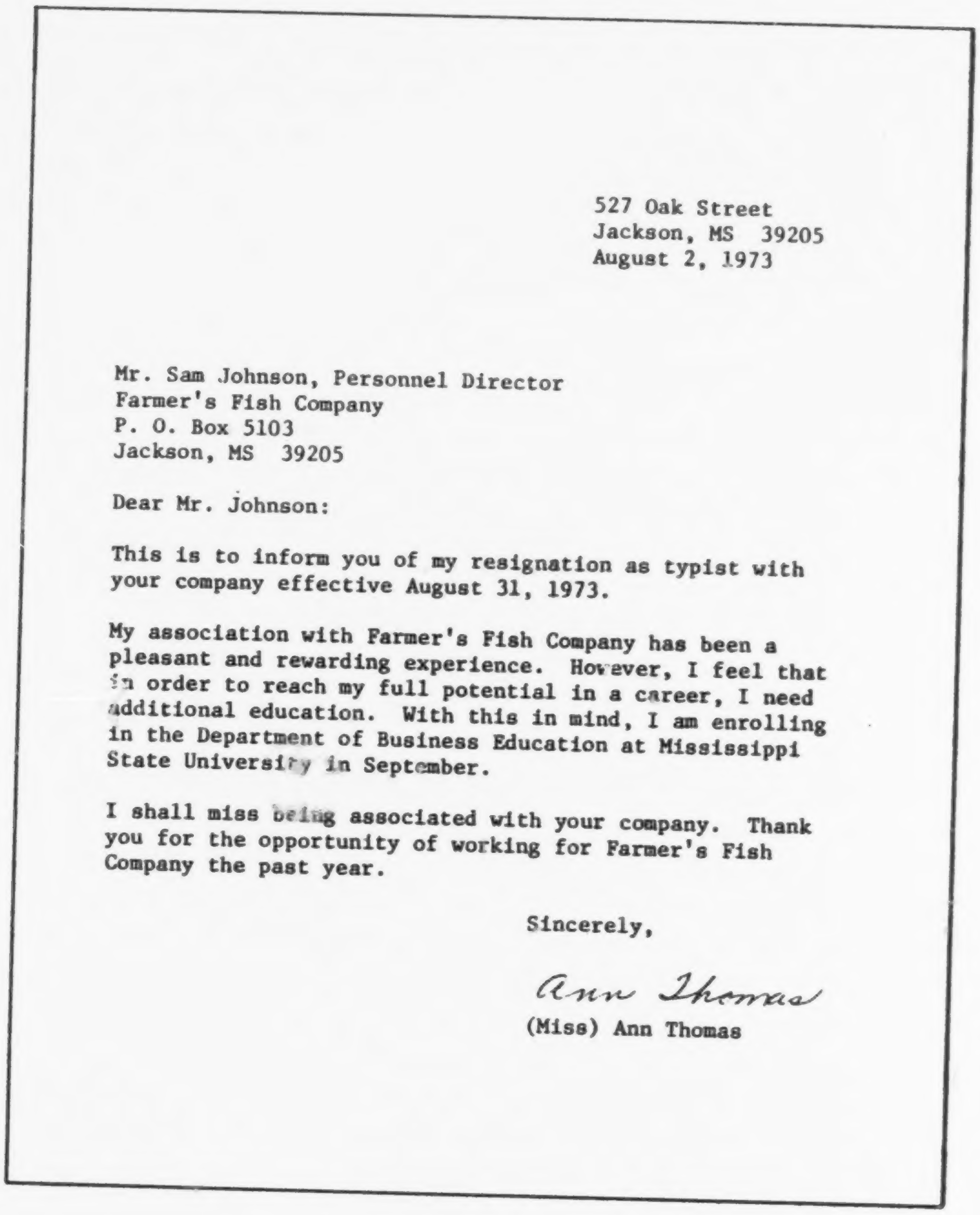
Changes in jobs should not be made hurriedly. In considering whether to change jobs, one should attempt to answer the following questions:

1. What does the future hold for the old and new jobs?
2. Will the new job be a promotion?
3. What will I lose in fringe benefits and seniority privileges? Gain?
4. Will I have greater security with the old or the new job?
5. Will I be happier in the new job?
6. How does the pay for the two jobs compare?
7. What does my family think of the change?
8. Do I have the education and training required for success in the new job?

After a new job has been found and accepted, one must quit the old job. In quitting a job, a worker should (1) orally tell his boss, *and* (2) write a letter of resignation.

A worker should tell his immediate supervisor face-to-face that he is planning to leave the job. The oral announcement should be given well in advance of the date one plans to quit—at least two to four weeks ahead of time. All discussion about quitting a job should be in friendly terms. It is a good idea to express appreciation to the employer for the opportunity of working for him and for other favors received.

A sample letter of resignation is shown below.



527 Oak Street
Jackson, MS 39205
August 2, 1973

Mr. Sam Johnson, Personnel Director
Farmer's Fish Company
P. O. Box 5103
Jackson, MS 39205

Dear Mr. Johnson:

This is to inform you of my resignation as typist with your company effective August 31, 1973.

My association with Farmer's Fish Company has been a pleasant and rewarding experience. However, I feel that in order to reach my full potential in a career, I need additional education. With this in mind, I am enrolling in the Department of Business Education at Mississippi State University in September.

I shall miss being associated with your company. Thank you for the opportunity of working for Farmer's Fish Company the past year.

Sincerely,

Ann Thomas

(Miss) Ann Thomas

A letter of resignation should be submitted to the employer soon after the immediate supervisor has been told of the intent to leave. This letter should contain the following information:

1. You are leaving.
2. Why you are leaving.
3. The date you plan to leave.
4. Appreciation for the opportunity to have worked for the employer.

5. *What problems accompany changing jobs?*

Many of the same problems that accompany adjusting to a first job are also problems in changing jobs. One of the main problems is that of "fitting in." A worker must learn what the employer expects and the routine of the new job. For older workers, this may be difficult. Older workers are often less able to adjust to changes in routine. For this reason, older workers do not change jobs very often.

Workers who are established in a community and have families have additional problems when changing jobs. This is especially true if it is necessary to move the place of residence. If a home is owned, it must be sold. The expense of moving may be considerable. Some employers, however, will pay the moving expenses for employees. Children may have to change the schools they attend and leave their friends.

A problem many workers face when changing jobs is that they have no income during the time between jobs. The expenses of living continue whether one has an income or not. It may be possible to use accumulated leave (paid vacation) in getting settled in a new location so there will not be any time without income.

Another problem that workers may face when changing jobs is that they lose many fringe benefits. The amount paid into retirement programs may be lost. Seniority may be lost when changing employers. Accumulated vacation and sick leave time may be forfeited.

Changing jobs is an important step. All of the problems that may arise should be studied before a decision is made. An important consideration is whether or not one remains with the same employer. Fringe benefits and seniority are usually not lost if a job change is within the same company. This is to be contrasted with changing to new employers in which all seniority and fringe benefits may be lost.

Review Questions:

1. What are the three kinds of promotions? Explain each.
2. What do employers consider in granting promotions?
3. How does the relationship among workers change when one of the workers is promoted?
4. What are some reasons people change jobs?
5. What should be considered in determining whether to change jobs?
6. What four items of information should a letter of resignation contain?

Suggested Activities:

1. Invite a personnel director or manager of a local business to visit class. Have him explain how and why workers are promoted.

2. Invite a person who has recently changed jobs to visit class and discuss some of the problems he had in changing jobs.

3. Write a sample letter of resignation from a fictitious job that you might hold.

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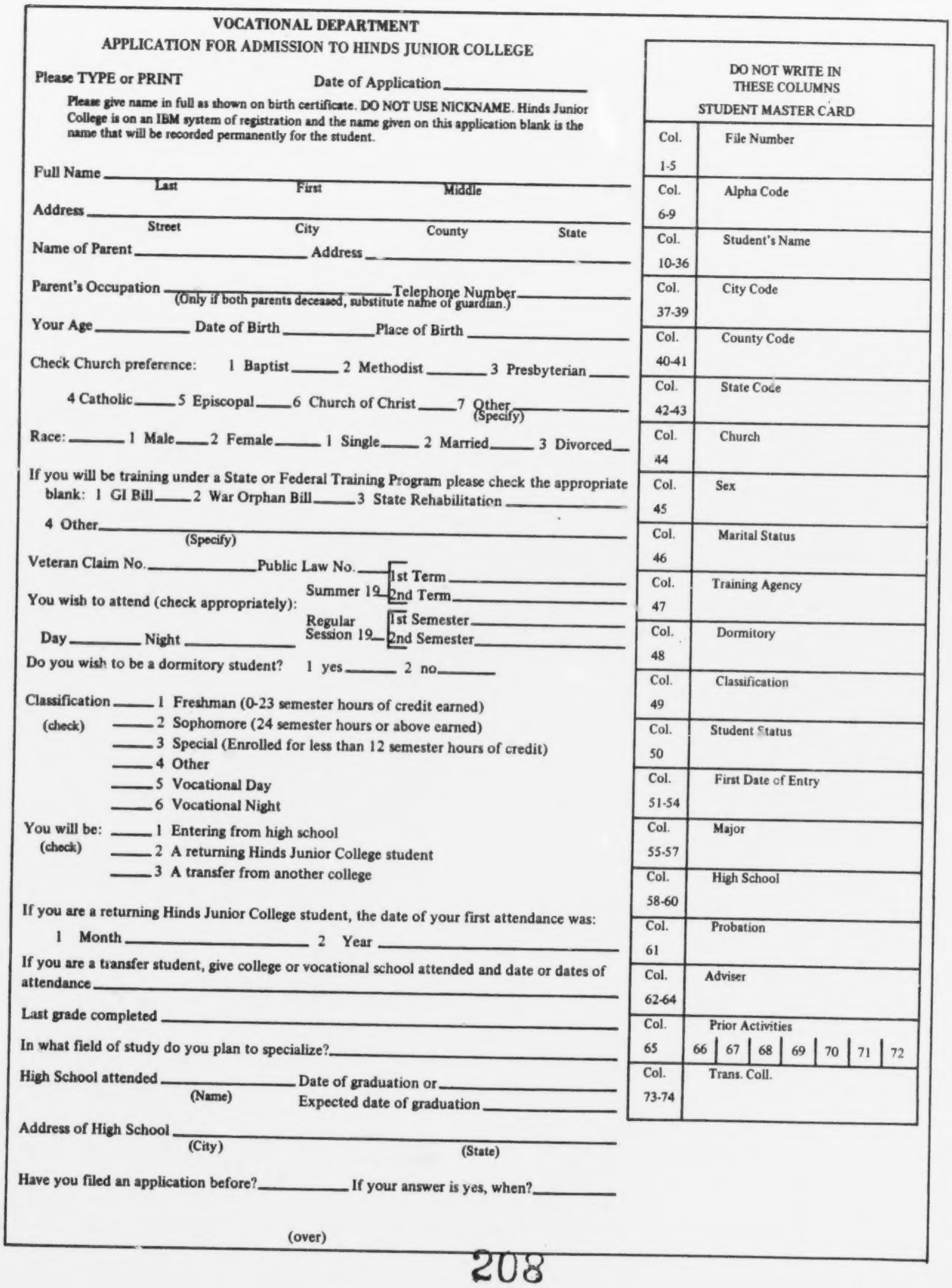
APPENDIX A

Sample Application for Admission to a Vocational School

(Courtesy Robert M. Mayo, President, Hinds Junior College, Raymond, Mississippi.)



VOCATIONAL DEPARTMENT

APPLICATION FOR ADMISSION TO HINDS JUNIOR COLLEGE

Please TYPE or PRINT Date of Application ______

Please give name in full as shown on birth certificate. DO NOT USE NICKNAME. Hinds Junior College is on an IBM system of registration and the name given on this application blank is the name that will be recorded permanently for the student.

Full Name ______ Last First Middle

Address ______ Street City County State

Name of Parent ______ Address ______

Parent's Occupation ______ Telephone Number ______
(Only if both parents deceased, substitute name of guardian.)

Your Age ______ Date of Birth ______ Place of Birth ______

Check Church preference: 1 Baptist ______ 2 Methodist ______ 3 Presbyterian ______

4 Catholic ______ 5 Episcopal ______ 6 Church of Christ ______ 7 Other ______ (Specify)

Race: ______ 1 Male ______ 2 Female ______ 1 Single ______ 2 Married ______ 3 Divorced ______

If you will be training under a State or Federal Training Program please check the appropriate blank: 1 GI Bill ______ 2 War Orphan Bill ______ 3 State Rehabilitation ______

4 Other ______ (Specify)

Veteran Claim No. ______ Public Law No. ______

You wish to attend (check appropriately):

Summer 19__ 1st Term ______ 2nd Term ______

Regular Session 19__ 1st Semester ______ 2nd Semester ______

Day ______ Night ______

Do you wish to be a dormitory student? 1 yes ______ 2 no ______

Classification (check)
- ______ 1 Freshman (0-23 semester hours of credit earned)
- ______ 2 Sophomore (24 semester hours or above earned)
- ______ 3 Special (Enrolled for less than 12 semester hours of credit)
- ______ 4 Other
- ______ 5 Vocational Day
- ______ 6 Vocational Night

You will be: (check)
- ______ 1 Entering from high school
- ______ 2 A returning Hinds Junior College student
- ______ 3 A transfer from another college

If you are a returning Hinds Junior College student, the date of your first attendance was:

1 Month ______ 2 Year ______

If you are a transfer student, give college or vocational school attended and date or dates of attendance ______

Last grade completed ______

In what field of study do you plan to specialize? ______

High School attended ______ (Name) Date of graduation or ______ Expected date of graduation ______

Address of High School ______ (City) (State)

Have you filed an application before? ______ If your answer is yes, when? ______

(over)

DO NOT WRITE IN THESE COLUMNS

STUDENT MASTER CARD

Col. 1-5	File Number						
Col. 6-9	Alpha Code						
Col. 10-36	Student's Name						
Col. 37-39	City Code						
Col. 40-41	County Code						
Col. 42-43	State Code						
Col. 44	Church						
Col. 45	Sex						
Col. 46	Marital Status						
Col. 47	Training Agency						
Col. 48	Dormitory						
Col. 49	Classification						
Col. 50	Student Status						
Col. 51-54	First Date of Entry						
Col. 55-57	Major						
Col. 58-60	High School						
Col. 61	Probation						
Col. 62-64	Adviser						
Col. 65	Prior Activities 66	67	68	69	70	71	72
Col. 73-74	Trans. Coll.						

Close relatives who are former students of Hinds Junior College:

Name	Relation	Present Address and Occupation

How did you become interested in attending Hinds Junior College?

For reference purposes, please give below the names and addresses of two people:

Do you work full time? YES________ NO________ Occupation________________________

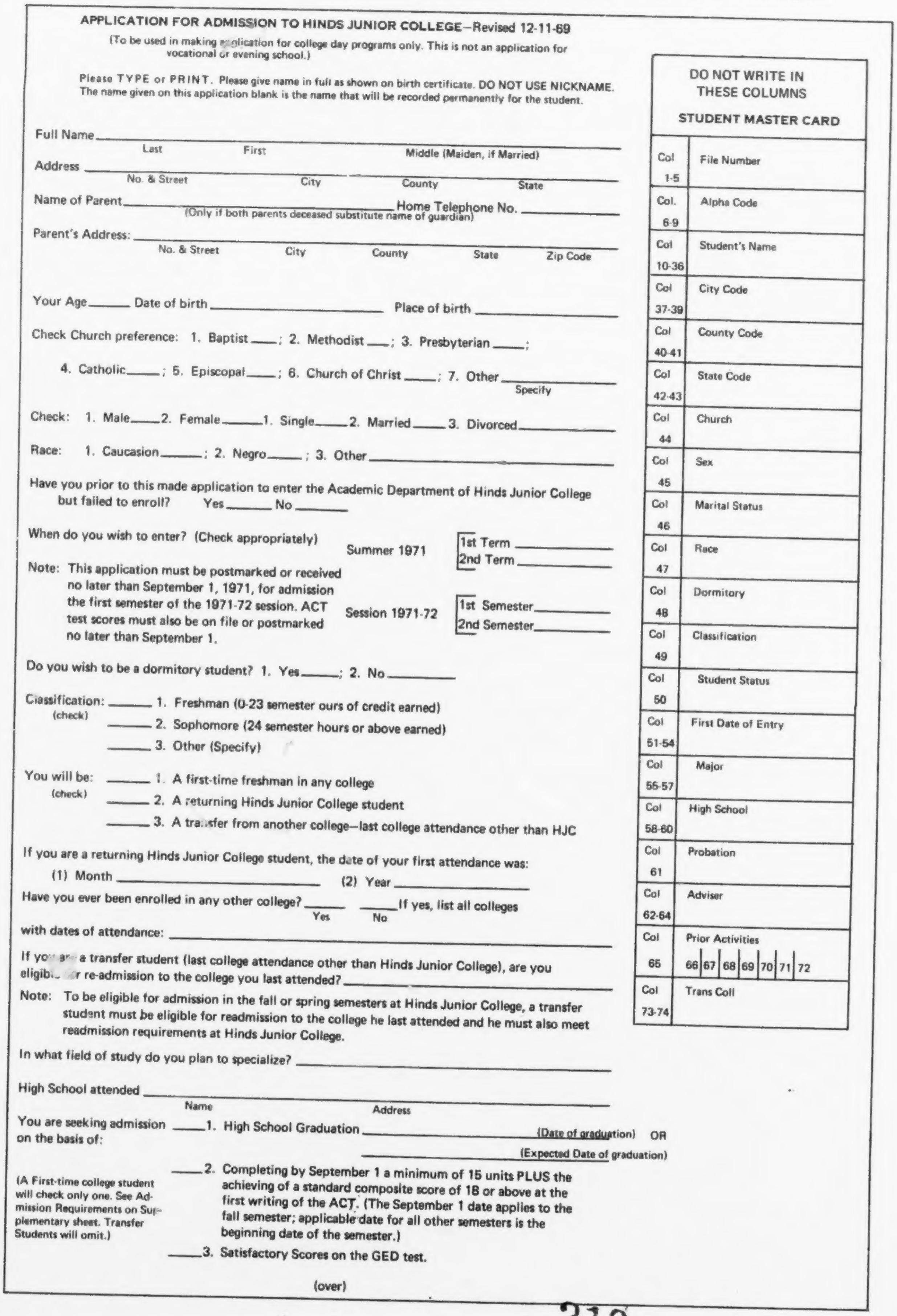
Your Employer's Name____

Business Address____

Please return this application, together with the Health Examination Record and the Dormitory Application Form to the:

Vocational-Technical Division
Hinds Junior College
Raymond, Mississippi

APPENDIX B
Sample Application for Admission to a College
(Courtesy Robert M. Mayo, President, Hinds Junior College, Raymond, Mississippi.)



APPLICATION FOR ADMISSION TO HINDS JUNIOR COLLEGE—Revised 12-11-69

(To be used in making application for college day programs only. This is not an application for vocational or evening school.)

Please TYPE or PRINT. Please give name in full as shown on birth certificate. DO NOT USE NICKNAME. The name given on this application blank is the name that will be recorded permanently for the student.

Full Name ______________________________
Last First Middle (Maiden, if Married)

Address ______________________________
No. & Street City County State

Name of Parent ____________________ Home Telephone No. __________
(Only if both parents deceased substitute name of guardian)

Parent's Address: ______________________________
No. & Street City County State Zip Code

Your Age ______ Date of birth ______________ Place of birth ______________

Check Church preference: 1. Baptist ____; 2. Methodist ____; 3. Presbyterian ____;
4. Catholic ____; 5. Episcopal ____; 6. Church of Christ ____; 7. Other ______________
Specify

Check: 1. Male ____ 2. Female ____ 1. Single ____ 2. Married ____ 3. Divorced ________

Race: 1. Caucasion ______; 2. Negro ______; 3. Other ______________

Have you prior to this made application to enter the Academic Department of Hinds Junior College but failed to enroll? Yes ______ No ______

When do you wish to enter? (Check appropriately)

Summer 1971
1st Term ______________
2nd Term ______________

Session 1971-72
1st Semester ______________
2nd Semester ______________

Note: This application must be postmarked or received no later than September 1, 1971, for admission the first semester of the 1971-72 session. ACT test scores must also be on file or postmarked no later than September 1.

Do you wish to be a dormitory student? 1. Yes ______; 2. No ________

Classification: (check)
______ 1. Freshman (0-23 semester ours of credit earned)
______ 2. Sophomore (24 semester hours or above earned)
______ 3. Other (Specify)

You will be: (check)
______ 1. A first-time freshman in any college
______ 2. A returning Hinds Junior College student
______ 3. A transfer from another college—last college attendance other than HJC

If you are a returning Hinds Junior College student, the date of your first attendance was:
(1) Month ______________ (2) Year ______________

Have you ever been enrolled in any other college? ______ Yes ______ No If yes, list all colleges with dates of attendance: ______________________________

If you are a transfer student (last college attendance other than Hinds Junior College), are you eligible for re-admission to the college you last attended? ______________

Note: To be eligible for admission in the fall or spring semesters at Hinds Junior College, a transfer student must be eligible for readmission to the college he last attended and he must also meet readmission requirements at Hinds Junior College.

In what field of study do you plan to specialize? ______________________________

High School attended ______________________________
Name Address

You are seeking admission on the basis of:

______ 1. High School Graduation ______________ (Date of graduation) OR
______________ (Expected Date of graduation)

______ 2. Completing by September 1 a minimum of 15 units PLUS the achieving of a standard composite score of 18 or above at the first writing of the ACT. (The September 1 date applies to the fall semester; applicable date for all other semesters is the beginning date of the semester.)

______ 3. Satisfactory Scores on the GED test.

(A First-time college student will check only one. See Admission Requirements on Supplementary sheet. Transfer Students will omit.)

(over)

DO NOT WRITE IN THESE COLUMNS

STUDENT MASTER CARD

Col 1-5	File Number
Col. 6-9	Alpha Code
Col 10-36	Student's Name
Col 37-39	City Code
Col 40-41	County Code
Col 42-43	State Code
Col 44	Church
Col 45	Sex
Col 46	Marital Status
Col 47	Race
Col 48	Dormitory
Col 49	Classification
Col 50	Student Status
Col 51-54	First Date of Entry
Col 55-57	Major
Col 58-60	High School
Col 61	Probation
Col 62-64	Adviser
Col 65	Prior Activities 66 | 67 | 68 | 69 | 70 | 71 | 72
Col 73-74	Trans Coll

Have you taken the American College Test? Yes______No_______ If NO, you must take the test in time to have your scores registered in our office by September 1 for enrollment the fall semester.

If you have taken the ACT test, did you request the scores to be sent to Hinds Junior College? Yes____No____If NO, it is your responsibility to see that we receive the scores by September 1 for enrollment the fall semester.

Check the activities in which you have previously participated: 65. Band____ ; 66. Chorus ____ ; 67. Tennis ______ ;

68. Golf____ ; 69. Debate_____ ; 70. Drama____; 71. Publications______; 72. Other____________________
(specify)

Close relatives who are former students of Hinds Junior College:

Name	Relation	Present Address and Occupation

How did you become interested in attending Hinds Junior College?

For reference purposes, please give below the names and addresses of two people:

1. ____
2. ____

Signature of Applicant ____________________________

Social Security Number of Applicant ______________________

Date of this Application ____________________________

Please return this application, TOGETHER WITH THE HEALTH EXAMINATION RECORD AND THE DORMITORY APPLICATION FORM to the

Registrar
Hinds Junior College
Raymond, Mississippi 39154

ONLY FOR THOSE WHO PLAN TO ATTEND THE 1971 SUMMER SCHOOL:

Subjects Desired in the Summer School:

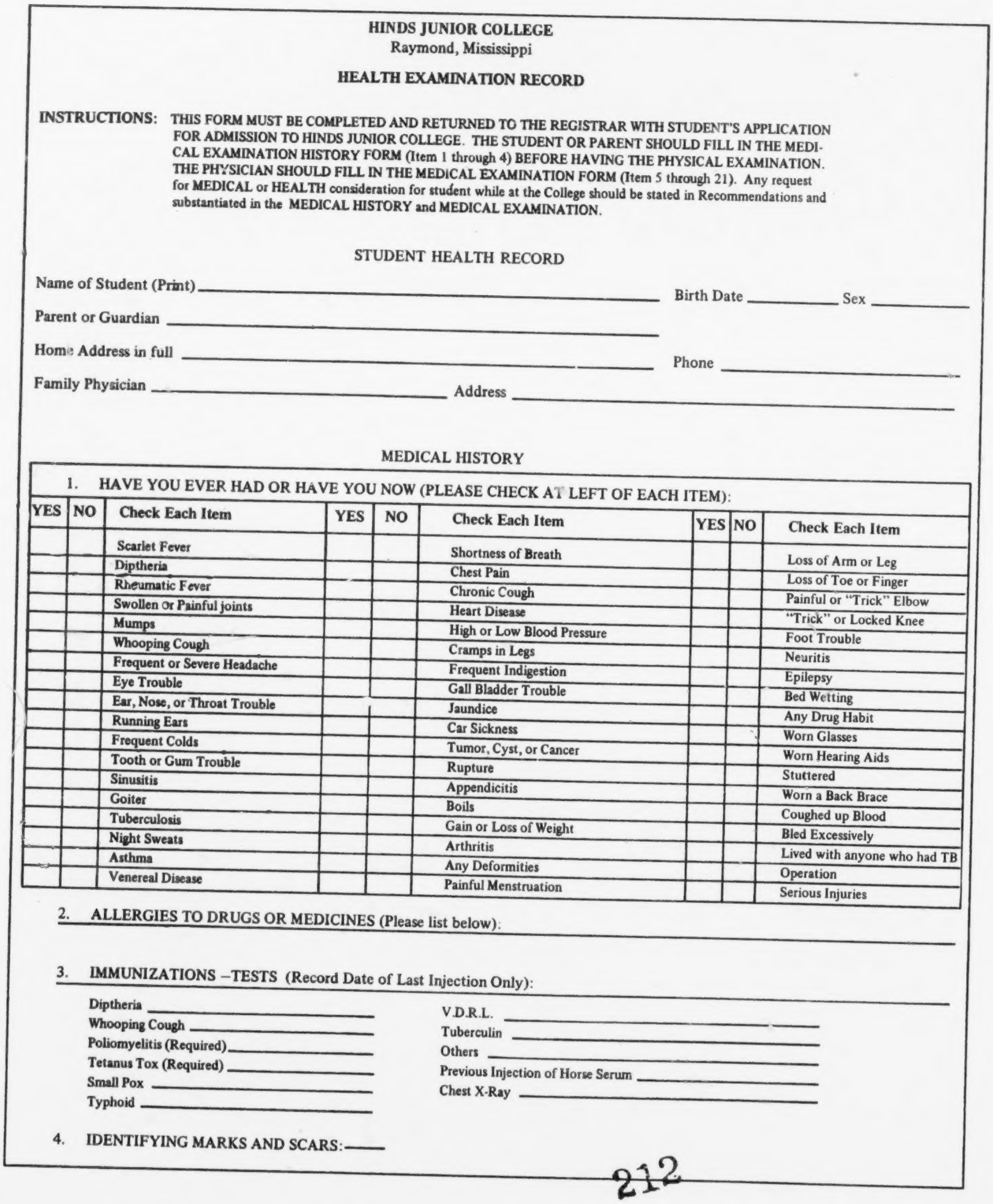
First Term	Second Term
Course and Number	Course and Number
Course and Number	Course and Number

211

APPENDIX C

Sample Health Examination Record

(Courtesy Robert M. Mayo, President, Hinds Junior College, Raymond, Mississippi.)



HINDS JUNIOR COLLEGE
Raymond, Mississippi

HEALTH EXAMINATION RECORD

INSTRUCTIONS: THIS FORM MUST BE COMPLETED AND RETURNED TO THE REGISTRAR WITH STUDENT'S APPLICATION FOR ADMISSION TO HINDS JUNIOR COLLEGE. THE STUDENT OR PARENT SHOULD FILL IN THE MEDICAL EXAMINATION HISTORY FORM (Item 1 through 4) BEFORE HAVING THE PHYSICAL EXAMINATION. THE PHYSICIAN SHOULD FILL IN THE MEDICAL EXAMINATION FORM (Item 5 through 21). Any request for MEDICAL or HEALTH consideration for student while at the College should be stated in Recommendations and substantiated in the MEDICAL HISTORY and MEDICAL EXAMINATION.

STUDENT HEALTH RECORD

Name of Student (Print) ______________________ Birth Date __________ Sex __________

Parent or Guardian ______________________

Home Address in full ______________________ Phone __________

Family Physician ______________________ Address ______________________

MEDICAL HISTORY

1. HAVE YOU EVER HAD OR HAVE YOU NOW (PLEASE CHECK AT LEFT OF EACH ITEM):

YES	NO	Check Each Item	YES	NO	Check Each Item	YES	NO	Check Each Item
		Scarlet Fever			Shortness of Breath			Loss of Arm or Leg
		Diptheria			Chest Pain			Loss of Toe or Finger
		Rheumatic Fever			Chronic Cough			Painful or "Trick" Elbow
		Swollen or Painful joints			Heart Disease			"Trick" or Locked Knee
		Mumps			High or Low Blood Pressure			Foot Trouble
		Whooping Cough			Cramps in Legs			Neuritis
		Frequent or Severe Headache			Frequent Indigestion			Epilepsy
		Eye Trouble			Gall Bladder Trouble			Bed Wetting
		Ear, Nose, or Throat Trouble			Jaundice			Any Drug Habit
		Running Ears			Car Sickness			Worn Glasses
		Frequent Colds			Tumor, Cyst, or Cancer			Worn Hearing Aids
		Tooth or Gum Trouble			Rupture			Stuttered
		Sinusitis			Appendicitis			Worn a Back Brace
		Goiter			Boils			Coughed up Blood
		Tuberculosis			Gain or Loss of Weight			Bled Excessively
		Night Sweats			Arthritis			Lived with anyone who had TB
		Asthma			Any Deformities			Operation
		Venereal Disease			Painful Menstruation			Serious Injuries

2. ALLERGIES TO DRUGS OR MEDICINES (Please list below):

3. IMMUNIZATIONS –TESTS (Record Date of Last Injection Only):

Diptheria ______________
Whooping Cough ______________
Poliomyelitis (Required) ______________
Tetanus Tox (Required) ______________
Small Pox ______________
Typhoid ______________

V.D.R.L. ______________
Tuberculin ______________
Others ______________
Previous Injection of Horse Serum ______________
Chest X-Ray ______________

4. IDENTIFYING MARKS AND SCARS: ____

MEDICAL EXAMINATION
By Licensed Physician

5. Height	6. Weight	7. Blood Pressure	8. T.P.R.	9. Urinalysis	10. Chest X-Ray

GENERAL EVALUATION	REMARKS AND RECOMMENDATIONS
11. Eyes Vision	
12. Ears, Nose, Throat and Mouth	
13. Respiratory Tract	
14. Heart and Circulation	
15. Gastro-Intestinal Tract	
16. Genito-Urinary Tract	
17. Endocrine System	
18. Neuro-Muscular Systems	
19. Skin	
20. Psychological	
21. Other Indications	
Date of Examination	Signed , M.D.